A Lecture
ON
PHARYNGEAL ABSCESSES.

Delivered at the Hospital for Sick Children, Great Ormond-street, London, W.C.,

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GENTLEMEN,—Abscesses in the pharynx are of perpetual interest on account of the difficulty in detecting their presence in the early stages of their formation, and of the danger which attends the failure to do so. Perhaps the fact that in very young children the symptoms are seldom referred directly to the site of the lesion is one reason why they are so frequently overlooked at the onset. Nor can the mother—who as a rule is an accurate observer and interpreter of the cause of symptoms of illness in her child—shed much light upon the trouble. She is generally deceived to the extent of completely misinterpreting the symptoms in these cases and mistakes the reluctance of the child to swallow for "vomiting," "loss of appetite," "cough," "bronchitis," "teething," and many other disorders with which she is familiar. Such a history must have some slight tendency to prejudice the view that is taken of the case at the beginning, especially since many of the symptoms of a pharyngeal abscess in the earliest stage are common to it and these other disorders. In many cases the onset of some acute specific illness may be suspected—a suspicion rightly founded when the early symptoms are so frequently those of a toxæmia. To include a certain type of these abscesses in the list of acute specific disorders is at any rate an aid to the making of a differential diagnosis of great value to the patient, although it may not be a correct application of the term from the standpoint of pathology. But it is of far greater importance to remember that in the routine examination of a child who is obviously ill and in whom the symptoms and physical signs are ambiguous and not mutually explanatory an examination of the pharynx must be included. By such means only will the inflamed area in the pharynx be detected in its earliest stage. The extreme importance of this procedure lies in the fact that the best treatment of pharyngeal abscesses is to prevent them, and only by the application of suitable forms of treatment at this stage is prevention possible.

Pharyngeal abscesses may be divided into two classes, tuberculous and non-tuberculous, and the latter class may be subdivided into intra-pharyngeal abscesses and extra-pharyngeal abscesses according to the situation of the primary focus of infection either within the walls of the pharynx or outside of them.

1. *Tubercular pharyngeal abscesses.*—These are the only abscesses of the pharynx which arise in the middle line of the posterior wall of the pharynx and spread outwards. They are found in cases of tuberculous disease of the cervical vertebræ and their mode of onset is insidious. In consequence it is of great importance to examine the pharynx at regular intervals in these cases. Inspection alone is valueless and must be followed by palpation. If this procedure has been neglected an abscess may have attained considerable size before symptoms appear which compel attention to the pharynx. By this time superficial ulceration of the pharyngeal wall may have already begun and consequently the risk of a secondary infection being grafted upon a purely tuberculous lesion has been intensified. Dysphagia is generally the symptom that first appears but by the time that it has done so the abscess as a rule has already attained a considerable size.

The treatment must be carried out strictly on those surgical principles which govern the treatment of all tuberculous lesions and especially those in connexion with bone. The avoidance of all secondary infection is the predominant factor in determining a successful result, and therefore these abscesses must always be opened by an incision in the neck. The lining membrane must be removed methodically by a sharp spoon, not by haphazard scraping. Enlarged glands in the neck must be dissected out and the wound closed. A drainage-tube may be inserted for 24 hours. It is seldom one's fortune to be able to remove a sequestrum from the bodies of the vertebræ by these means. Only occasionally does it happen so and therefore the abscesses tend to recur. But by a repetition of these procedures at the earliest sign of recurrence a cure generally results.

2. *Non-tubercular abscesses.*—(*a*) Intra-pharyngeal abscesses of non-tuberculous origin and in which the primary site of the lesion is on the internal surface of the pharynx arise invariably as the result of some inflammatory affection of the tonsil. They have been described as arising spontaneously or as the result of trauma from swallowing some hard substance or from an infection in the post-pharyngeal tonsil or in lymphatic glands which lead a mythical existence upon the bodies of the cervical vertebræ. Further, they have been described as starting in the middle line of the posterior pharyngeal wall. The only kind of abscess that does start there is the tubercular one in association with caries of the spine. These others always start on the side wall of the pharynx immediately behind one posterior pillar of the fauces; they spread backwards along the lateral wall of the pharynx until they reach the posterior wall, when they spread inwards towards the middle line which they cross and sometimes spread round the opposite lateral wall of the pharynx until they nearly reach the other tonsil. But even in the case of the largest abscess it is generally possible to appreciate by means of the finger that on one side there is no groove between the tonsil and the abscess, whilst on the other side towards which the abscess is spreading there is generally a groove between the advancing edge of the abscess and the other tonsil. It is exceedingly rare for this class of abscess to point externally in the neck, since it is far easier for them to track round or in the pharyngeal wall and then bulge forwards into the cavity of the oral part of the pharynx. If a pharyngeal abscess points externally in the neck it almost always belongs to the class of extra-pharyngeal abscesses, in which the abscess has originated from a suppurating gland in the neck. These abscesses may be divided into stages according to the symptoms they cause. In the very earliest stage they give rise to no particular group of symptoms. They are then found to exist as small, hard, rounded swellings in the side wall of the pharynx immediately behind a posterior pillar of the fauces. They can easily be felt and very frequently can be seen. The tonsil immediately in front of them is slightly pushed forwards; there is no groove between it and the indurated swelling and the tonsil is generally hypertrophied and ulcerated. They will only be discovered at this stage as the result of a routine examination of a child who is ill and in whom the cause of the illness is obscure—an obscurity which is frequently illuminated by careful examination of the pharynx. It is at this stage that their further development may be arrested by appropriate treatment. In the next stage the group of symptoms indicate, as a rule, that the site of the lesion is in the pharynx. The child has a characteristic "muffled cry," he is frequently soaked by saliva which he dribbles rather than suffer pain from swallowing it, and the head is thrown back so that the opening of the larynx shall not be occluded by the abscess in the forward position. He has an obvious difficulty in swallowing, which the mother may describe as "vomiting," or even "coughing," and the profuse salivation often leads her to suspect "teething." There are, as a rule, no enlarged glands in the neck, or the enlargement is only a slight one. Finally the abscess can be both felt and seen—at this stage it is a tense elastic swelling. As the swelling increases in size the third stage is reached which is characterised by all the signs and symptoms of obstructive dyspnœa. It is in this stage that the condition has been mistaken for diphtheria with laryngeal involvement, tracheotomy has been performed without any relief to the symptoms, and a fatal issue has speedily ensued. Such a mistake can only be avoided by adhering rigidly to the rule of examining the pharynx with the finger in all cases of obstructive dyspnœa. Inspection of the pharynx is difficult in small children and even when membrane can be seen on the tonsils it is necessary to exclude the presence of a pharyngeal abscess by palpation, since it can co-exist with diphtheria and may not infrequently be found to be present in an early stage of formation. In obstructive dyspnœa caused by a pharyngeal abscess "stridor" and "croup" are not generally present. These are valuable signs for differentiating the condition from laryngeal diphtheria.

(*b*) When the deep lymphatic glands of the neck are enlarged under certain conditions they push the side wall of the pharynx inwards. If the gland which is nearest to the pharyngeal wall has already broken down it will form a tense, rounded, elastic swelling bulging into the oral part of the pharynx. It has, therefore, all the appearances of a pharyngeal abscess, but from its mode of origin it is extra-pharyngeal. (The glands in the neck may have enlarged as the result of a purely tuberculous infection, but as a rule the infection is a mixed one and therefore this type of abscess is not classed with those arising from caries of the spine.) It is clear from the mode of its formation that it must always be preceded by an enlargement of glands in the neck, which has persisted for some considerable time. It ought to be detected as the result of a routine examination of the pharynx before it has had time to give rise to characteristic pharyngeal symptoms. Evidence of softening of enlarged glands in the neck is always carefully watched for in those glands immediately underlying the skin. It is of equal importance to watch for it in those glands which lie close to the wall of the pharynx.

The most satisfactory treatment of intra-pharyngeal abscesses is to prevent their formation. This can only be done when they are detected in the first stage of their formation as a small indurated mass behind a posterior pillar of the fauces. The throat must then be syringed at short intervals with an alkaline lotion and the ulcerated surface of the tonsil painted with a solution of salol in glycerine, or with compound tincture of benzoin, or with any of the usual applications for inflammatory conditions of the throat. A mixture containing chlorate of potassium and salicylate of sodium given every few hours further aids in keeping the mouth and throat clean. The patient must be kept upon a strictly fluid diet. In many cases the adoption of these measures leads to the disappearance of the indurated mass within five or seven days. As soon as all signs of acute inflammation have disappeared the tonsils must be removed completely by enucleation and so the future formation of an intra-pharyngeal abscess rendered practically impossible. In several hundreds of cases in which this procedure has been adopted so far no case has appeared again with an intra-pharyngeal abscess, whilst in those in which an abscess had already formed before they came under my observation there was not one from which the tonsils had been previously removed.

When an abscess has already formed immediate operation is the only treatment. The consideration as to whether the abscess is of intra-pharyngeal or extra-pharyngeal origin will determine the controversy as to whether it should be opened through the neck or through the mouth. No one would seriously advocate the opening of a quinsy through the neck nor would they advocate the evulsion of enlarged glands from the neck through an opening in the mouth.

Intra-pharyngeal abscesses can only be successfully treated by an incision made through the inner wall of the pharynx and extra-pharyngeal abscesses by an operation through the neck. In the former case an anæsthetic must be given unless the patient is already moribund from obstructive dyspnœa. A sand-bag must be placed under the shoulders so that the head falls backwards sufficiently to form an inclined plane down which the pus can travel towards the naso-pharynx and yet does not form so great an inclination as to cause a congestion of the pharyngeal plexuses of veins. A guarded scalpel must be used and with the index finger of the left hand as a guide an incision must be made extending over the whole length of the abscess cavity. Unless this is done a pocket will be left at the lower end which cannot be drained properly and will be a fruitful source of future complications. If the abscess is very large it is impossible to make the incision along the whole length of it by one cut. The pus must be evacuated through a small opening, so that the tumour partially collapses, and then the incision can be extended to its proper length. The operator must stand behind the patient's head and the direction of the cut must be from below upwards. The most suitable after-treatment for these cases is to syringe the back of the throat frequently with an alkaline lotion, keep the patient on liquid food, and give a mixture containing chlorate of potassium and salicylate of sodium. Most cases are quite well within from five to seven days after the operation.

An extra-pharyngeal abscess must be opened externally through the neck. The operation to be successful involves the complete removal of all the enlarged glands and from the position of the abscess these have generally to be removed before the abscess is reached. The direction of incision must be so planned that all the glands from the anterior and posterior triangles of the neck can be removed if necessary. When the abscess has been opened the cavity must be dissected away from the surrounding structures as far as possible and when dissection is impossible the lining membrane must be carefully removed by a sharp spoon. After well washing with a sterilised saline solution the wound in the neck must be stitched up. A small drainage-tube may be inserted with advantage for 24 hours. In nearly all cases if the infected glands have been adequately removed healing takes place by first intention.

These methods have been applied to 25 cases of pharyngeal abscesses, excluding those arising from caries of the spine. In this series there was one death. The child was moribund from obstructive dyspnœa when admitted to the hospital and died from sudden syncope on the operation table. The remaining 24 cases have all been discharged well, those suffering from an intra-pharyngeal abscess within about a week from the date of operation and those suffering from an extra-pharyngeal abscess within about a fortnight from the date of operation. There has not been a single instance among them of those dreaded complications—septic pneumonia, septic mediastinitis, bronchitis, or a fistula in the neck. Such complications probably arise from failure to recognise the type of abscess in each case and therefore the appropriate site of operation is not chosen.

OBSERVATIONS ON THE ARTERIAL BLOOD PRESSURE IN HEART DISEASE.

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WHATEVER the prime lesion may be, the morbid effects of heart disease must be ascribed to failure of the heart pump—i.e., to a deviation from the normal of the mechanical conditions of the circulation. Since of these conditions the arterial blood pressure is the most important, all the complex reactive mechanisms being devoted to its maintenance, it is curious that few observations have been made on the state of the arterial blood pressure in cases of failure of compensation in heart disease. The only work on the subject with which I am acquainted is Clinical Observations on Arterial Blood Pressure,[1] and so far as I am aware no connected study of the whole subject has yet been made. The scattered observations which I have to bring forward in this paper may therefore serve as a stimulus to other inquiries in the same subject and may induce others to use the determination of arterial pressure as a means of diagnosis and probably a guide for treatment in cardiac disorders.

The classical signs of failure of compensation in heart disease include feeble or irregular pulse, low arterial tension, high venous pressure with backward effects leading to disorders of the abdominal viscera, and the production of œdema or ascites. When with these accepted signs of failure of compensation in man we attempt to imitate the conditions experimentally we are met at once by the difficulty, on which Cohnheim laid so much stress, of producing similar conditions in animals. It would seem simple to imitate aortic stenosis by partial ligature of the aorta. Cohnheim pointed out that the compensatory power of the heart muscle was so complete that such a ligature produced no effects whatever on the arterial pressure, the ventricles simply contracting with increased force in order to maintain the arterial pressure at its normal level. If the arterial stenosis were still further increased the heart, after one or two ineffective beats, would fail altogether. The rule in the heart appeared to be normal arterial pressure or no circulation at all. Owing to the impossibility of producing, by damage to the valves or by constriction of the arterial orifices, a condition of things which could be regarded as analogous to failure of compensation in heart disease, Cohnheim had recourse to the device of hampering the diastole of the heart by injection of oil into the pericardium.

[1] R. R. Stawell: International Medical Journal of Australasia, vol. x., No. 7.

This method was also used by E. H. Starling,[2] who studied the changes thereby induced both on arterial and venous pressures and showed that the result of such interference, so long as the pericardial distension allowed any circulation to occur at all resulted in a lowering of the arterial pressure and a rise of pressure in the great veins near the heart, including those of the liver. In the limbs, however, there was a fall both of venous and capillary pressures, so that it was impossible to account for the mechanical production of œdema by simple mechanical interference with the pumping action of the heart.

A study of the arterial pressure in cases of failure of compensation in man shows that there is no analogy between such cases and the case studied by Cohnheim. The injection of oil into the pericardium may be used as a means of study of the circulatory conditions in pericardial effusion, but has no bearing on cases of heart disease due to lesions of the valves or secondary to arterial conditions. In these the conditions are much more complex. Interference with the pumping action of the heart induces a whole cycle of consecutive changes, many of which are reactive in character and adapted to the neutralisation of the effects of the heart failure itself and which involve a number of different organs.

Methods.—I have used throughout this series of observations Dr. C. J. Martin's modification of the Riva-Rocci manometer. This is extremely simple in design and the methods of its use are easily acquired. In regard to observations on individuals not confined to bed I have made them rest in a sitting posture for from five to ten minutes before taking their blood pressure and nearly all the observations of this series were taken between 10 A.M. and 1 P.M. The arm which is being utilised is kept at rest on a table which brings it nearly to the level of the patient's heart. In the case of those confined to bed I have endeavoured as far as possible to take the successive observations at the same time and under exactly similar conditions on each occasion. For instance, since I prefer to have the arm bare which I am going to employ the patient removes his jacket and slips up the vest and shirt and then rests for five minutes to get over any exertion entailed in this process. I find that on the first occasion of estimation it is best to repeat the process of observation some three or four times until two successive readings are more or less identical. I take the last reading as correct when the patient's excitement or timidity has subsided. It is essential that the arm should rest in a comfortable position, as any muscular contraction tends to increase the resistance offered to the obliterating force and consequently gives a wrong estimation. Where observations are being taken on a case of intermittent or irregular heart I have always taken the maximal beat as being the true indication of the force against which the heart has to work; the intervening beats which fail to "come through" I regard as evidence of incompetence. It sometimes occurs that the obliterating pressure observed as the air is being pumped into the apparatus does not coincide with the pressure at which the pulse is again perceptible when the air is allowed to escape, and in this case I take the mean of the two observations as the estimation of the maximal blood pressure.

The arterial pressure in normal individuals.—Before we can draw any conclusions from observations in cases of heart disease we must have some idea of the variations of pressure which can be regarded as normal at any given age. I have been able to obtain information on this point from a series of observations made by Dr. Martin, the results of which he kindly placed at my disposal, from the paper by Stawell, as well as from observations made by myself on a number of normal individuals, as well as on others in whom there was no circulatory disorder. Up to 40 years of age the normal systolic pressure of a patient sitting quietly and free from any emotion may vary from 100 to 120 millimetres of mercury. This pressure can be markedly increased as the result of exertion, by rigidity of the muscles, or by excitement, any of which may raise the pressure 20 to 30 millimetres of mercury. It is therefore important to insure that such disturbing factors are absent in taking the arterial blood pressure in cases of disease. With increasing age above 40 years there appears to be increasing height of arterial pressure and in extreme old age we may observe pressures as high as 200 millimetres of mercury or more. Since, however, one of the most frequent causes of death in old people is by rupture of arteries or by heart failure, it is difficult to be certain how great a rise of pressure we should regard as normal and whether, indeed, under the most favourable conditions it might not be possible to maintain throughout life an arterial pressure corresponding to that which is normal for the young adult. In a few cases at any rate in old people I have observed pressures differing but little from that found in younger patients. A few of these might be quoted here. The blood pressure averages I have estimated are as follows: From 15 to 40 years, 119·3 millimetres of mercury; from 41 to 60 years, 141·7 millimetres of mercury; 61 years and over, 154·8 millimetres of mercury. A few striking examples of advancing age with little increase of blood pressure are: 1. C——, aged 60 years; robust old fellow; blood pressure 118. 2. E——, aged 46 years; healthy and robust; blood pressure (*a*) 128, (*b*) 122·5. 3. A——, aged 56 years; robust but dyspeptic; blood pressure 131. 4. L——, aged 47 years; healthy, not vigorous; blood pressure 120. 5. C——, aged 71 years; well-nourished old man; blood pressure 142. 6. S——, aged 77 years; robust old fellow; blood pressure 138.

Whether or not we regard a rise of pressure as a necessary concomitant of advancing age it is extremely difficult to make an average blood pressure for each age, owing to the increasing frequency among our cases at advancing ages of cases with an abnormally high arterial tension in whom sooner or later this raised tension will give rise to injurious effects. Professor T. Clifford Allbutt has already drawn attention to the importance of this class of case and I shall have to deal more fully with it in a later part of my paper.

The blood pressure in heart disease.—Perhaps the most striking fact which has resulted from my determinations is that, however bad the patient, however ineffective the work of the heart pump, in no case of heart disease ordinarily so called have I ever found an arterial pressure below normal. In the diseased man, as in the healthy experimental animal, the adaptive mechanism of the circulatory system is directed to the maintenance of a normal arterial pressure, and this will only fail when the heart is unable to beat any more—i.e., here, as in experiments on animals, the heart maintains the normal pressure or stops beating altogether.

The cases of heart disease proper—i.e., those in which there has been some lesion of the auricular, ventricular, or arterial orifices—may be divided into two main classes. Class I., those in which the arterial pressure is normal (from 100 to 125 millimetres of mercury); Class II., those in which the arterial pressure is considerably above normal (from 130 to 280 millimetres of mercury). As we shall see, both classes involve lesions either of the aorta, mitral, or tricuspid orifices. They differ, however, considerably in their etiology and therefore in the indications for their proper treatment.

Class I.—This class includes all kinds of heart lesions. In every case except one, however, it will be noticed that there was a history of an antecedent attack of rheumatism, which can be regarded as the prime cause of the heart disease. I give here a short account of some of these cases.

CASE A.—A female, aged 29 years; married. She had had acute rheumatism at 25 years. She had had three children, the last being born at sixth month of pregnancy, five months before admission to hospital. On admission she had to sit up in bed and was very dyspnœic; she was very anæmic. Heart enlarged; at apex a presystolic murmur and hard first sound could be heard; over aortic area a well-marked systolic murmur could be heard. No œdema or ascites. Blood pressure from 108 to 122 millimetres of mercury; approximated chiefly to latter figure towards the end of her stay in hospital. Diagnosis: mitral stenosis, probably aortic stenosis.

CASE B.—A female, aged 19 years; single. She had had rheumatic fever at 13 years. She was "quite well" except for a bad cough until a fortnight before admission. On admission she was a thin anæmic girl, dyspnœic, slightly cyanosed; no ascites or œdema. Apex beat was external to the nipple; long diastolic interval which was chiefly occupied by a presystolic murmur which ended in sharp first sound. Blood pressure was from 100 to 112 millimetres of mercury; no change during rest in bed. Diagnosis: mitral stenosis.

CASE C.—A female, aged 19 years; single. She had had chorea at five years and rheumatism at ten years of age. On admission she was dyspnœic, cyanosed, orthopnœic; had signs of backward pressure in lungs. The apex beat was in sixth intercostal space two inches external to the nipple; diffuse impulse over cardiac area and in epigastrium. Mitral systolic and presystolic bruits could be heard; pulse very irregular. Blood pressure was from 96 to 108 millimetres of mercury; no variation with treatment. Diagnosis: mitral stenosis and incompetence.

CASE D.—A female, aged 50 years. No history of rheumatism could be obtained. On admission she had passed only two ounces of urine during previous 24 hours. She was a fat, congested-looking woman with much œdema of back, some œdema of legs, was somewhat

[2] Arris and Gale Lectures: THE LANCET, Feb. 27th and March 6th and 13th, 1897.

cyanosed, and had a "mitral" character of facies. Heart beat feeble; apex beat could not be located; a systolic bruit could be heard over apex area. Blood pressure on admission was 174 millimetres of mercury; after ten days of a diuretic pill containing squill, digitalis, and mercury the blood pressure had risen to 150 millimetres of mercury, while the pulse had fallen from 120 to 80 per minute. The urine output during this time increased from under 5 ounces to over 50 ounces in the 24 hours. On the tenth day, when the patient was considerably improved, the diuretic pill was omitted and the blood pressure sank to 118 millimetres of mercury, where it remained until the patient's discharge from hospital, greatly benefited by rest and treatment. Diagnosis: mitral stenosis and regurgitation with suppression of urine.

FIG. 1.

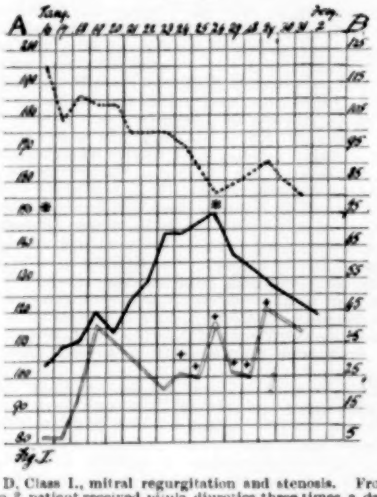


Fig. I.

CASE D, CLASS I., mitral regurgitation and stenosis. From * to * patient received pilula diuretica three times a day. The urine contained no albumin. The + signs show where some urine has been lost and the estimate is therefore lower than the correct amount. The numbers in Column A refer to the blood pressure in millimetres of mercury. The numbers in Column B refer to the amount of urine in ounces per diem and the pulse-rate per minute.

(N.B.—In all the charts the figures on the right-hand side of the page denote urine in ounces per diem and pulse per minute. The figures on the left-hand side denote blood pressure in millimetres of mercury. - - - - - - = Pulse. ——— = Blood pressure. ——— = Urine.)

CASE E.—A male, aged 44 years, was in hospital ten years ago for aortic incompetence, and since that time had been at his regular work. He was in the boot trade, work which necessitated standing up all day and was situated up three flights of stairs. Gave up work 14 days before admission. On admission he was a well built man; he could lie nearly flat in bed without inconvenience; had a little dyspnœa and a little œdema of the legs. "To-and-fro" aortic murmurs could be heard over aortic area and were transmitted down to the apex. Capillary pulsation was well marked. Blood pressure was from 122 to 136 millimetres of mercury; pulse was 64. Diagnosis: aortic stenosis and incompetence.

Discussion of cases.—In some of these cases the heart failure was limited to the left side, so that its chief result was increased distension of the lung vessels and the consequent interference with the respiratory functions (dyspnœa and cyanosis). In others, however, the failure has extended to the right side so that there was a rise of pressure in the systemic veins and signs of backward pressure in the liver with the production of ascites and œdema. Can we form any idea of the sequence of events in such conditions? It must be remembered that the guiding factor in the circulation is the maintenance of a normal arterial pressure, since it is only in this way that the brain, the ruling tissue of the body, can keep itself supplied with the proper amount of oxygen. A temporary failure of the heart to send the proper amount of blood to the brain, whether due to abnormal reflux through the mitral valves or to an abnormal obstacle to the emptying of the left auricle, is at once followed by efforts on the part of the vaso-motor system to remedy the deficiency. The first result is, therefore, a constriction of all the vessels in the body, especially those of the splanchnic area, and as a result a rise of venous pressure and therefore of pressure in the guiding cavities of the heart—namely, the venous orifices and the auricles. The greater tension on these cavities causes increased contraction and therefore tends to restore the ventricular output to its previous amount. The splanchnic constriction, as E. H. Starling showed, must lead to increased up-take of fluids from the alimentary canal and therefore finally to an increased volume of fluid in the circulation. The inadequate heart muscle has to be stimulated to further activity by increased stretching and this stretching is attained by an increased fulness of the venous system, which, as the inadequacy of the heart muscle progresses, must proceed backwards from heart to veins and finally, perhaps, even to the limb capillaries. The fact that in cases such as Case D, Class I., there was normal arterial pressure with increased venous pressures shows that the system must have been over-full—i.e., that there was a plethora. It is worth noting that this plethora has been actually found by Houston in certain cases of uncompensated heart disease. Unfortunately, in these cases no measurement was made of the arterial pressure. The existence of a condition of plethora in these cases indicates that more stress may be laid upon the mechanical conditions in the production of dropsical heart disease than was imagined by E. H. Starling, though there is no doubt that the effect of a high capillary pressure must be aided in these cases by the malnutrition of the capillary wall consequent on its defective blood-supply. For although the arterial pressure is maintained at the normal level the system itself does not succeed in achieving a normal circulation, since the high venous pressure will tend to diminish the gradient of pressures from arteries to veins, and the constricted condition of the arterioles will lessen the rapidity of flow through the capillaries. The directing factor in the whole cycle of events is the need of the brain for a normal oxygen supply. The venous pressure being raised the normal circulation through the brain could not be attained by simply keeping the arterial pressure at the normal amount. The patient therefore instinctively lowers the venous pressure in the vessels, which lead the blood away from the brain, by assuming an erect position, so that the return of blood from the brain may be aided by the influence of gravity, and the high venous pressure only makes itself felt in the dependent portions of the body. This is the reason for the orthopnœa which is the common feature of cases of mitral disease.

Effects of deficient oxygenation.—If the orthopnœa is not sufficient to maintain the normal supply of oxygen to brain, as in cases where cyanosis is well marked, a new series of events come into play. In the first place we have the original asphyxial excitation of the vaso-motor centre and therefore a rise of arterial pressure above normal. The heart, which could not carry out effectively its normal work, is thus called upon to do an amount of work which is very much greater than normal, a condition of things which must evidently lead to rapid exacerbation of the disorder and result finally in total failure of the circulation. In such cases, therefore, we may find a pressure of 130 to 140 millimetres of mercury in the arteries, although we are not justified in placing the case with the other cases which I deal with in Class II. The temporary asphyxial nature of the raised pressure is at once seen in such cases if, by rest or by the administration of digitalis or by bleeding, we are able to restore to some degree the functions of the heart. In such a case the first improvement in the heart's action is shown not only by diminished cyanosis but by a *fall* in the arterial blood pressure. The effect of asphyxia in causing a temporary rise of blood pressure is shown very strikingly in cases of asthma. I may here quote the particulars of one such case.

Class III. (special case).—A female, aged 63 years; admitted on Sept. 27th, 1905. For seven years she had had frequent attacks of asthma. On admission she was a small, very thin, and scraggy woman; she sat bolt upright in bed and had great respiratory distress. Had a typical attack of bronchial asthma and was very cyanosed. Progress and treatment: On Sept. 28th there was no albumin in urine; respirations 28 per minute. Blood pressure was 188 millimetres of mercury. On the 29th, inhalation of ethyl iodide had no effect on blood pressure and afforded no relief to the distress. Blood pressure was 180 millimetres of mercury. Two minims of morphine were injected hypodermically at 9 P.M. Three minims of pinol were given every four hours, and 10 minims of potassium iodide, 10 minims of tincture of stramonium, and half a drachm of spirit of ether three times a day. On the 30th she was much easier and had slept the previous night. Blood pressure was 148 millimetres of mercury. On Oct. 2nd she was progressing well, lay flatter in bed and breathed more easily. Cyanosis was disappearing. Blood pressure was 118 millimetres of mercury. On the 3rd blood pressure was 112. Patient was discharged on Oct. 10th cured of the attack.

Even in those cases where a barely adequate supply of oxygen to the respiratory centre is assured by position or other regulative mechanism, a deficient circulation through the rest of the body will involve a deficient oxygenation. The blood as it circulates through all organs of the body,

including bone marrow, will have a tension of oxygen which is below normal. The effect of this diminished tension has been studied by many observers. When prolonged three or four weeks or more it leads, as at high altitudes, to an increased production of red blood corpuscles, to a condition of polycythæmia. We have seen reason to conclude that there is an increased volume of circulating fluid as the result of mechanical disturbances of the circulation. The result of the deficient oxygenation is to cause an increased formation of corpuscles, so that the total circulating fluid may, as the result of these two factors, present a hæmoglobin content and a blood corpuscle number which is little removed from normal and may be slightly above or slightly below. The result is therefore not a hydræmic plethora but a true plethora—a lasting adaptation directed to furnish, by maintenance of increased venous pressure, that extra tensile stimulus to contraction which is required by the damaged heart.

Class II. Cases with permanently raised arterial pressure.—Besides the cases in which asphyxial conditions cause a temporary rise of arterial pressure—i.e., a rise which will disappear with the removal of the maloxygenation—there is another and larger class of cases in which a permanently raised pressure is present throughout the illness. In these cases relief of the symptoms and of the condition of the heart by therapeutic measures does not bring about any lowering of the blood pressure. I give here notes of a number of such cases.

CASE A.—A male, aged 40 years, carter. Was first ill in January, 1905, with dyspnœa and œdema of feet. He went to bed for a few days, then returned to work. In June he came into hospital and went out after six weeks much improved, but has not done any work since. On admission, on Nov. 11th, he was very dyspnœic and had a troublesome cough. Heart enlarged, especially left ventricle; impulse strong and heaving. "To-and-fro" aortic murmurs heard all over cardiac area, very marked over aortic area; also heard at apex, where also was a soft

FIG. 2.

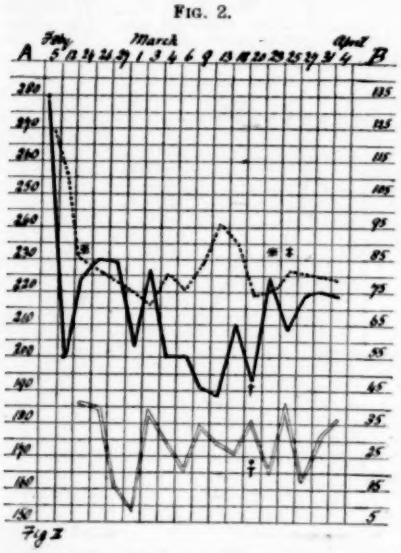


Fig 2

CASE C. Class II. ? fusiform aneurysm. From * to * the patient received two minims of liquor trinitrini every eight hours. On March 9th to this mixture were added four grains of potassium iodide and one extra minim of liquor trinitrini. † Denotes blood pressure before and after taking mixture. ‡ Means that the mixture was omitted and tabella nitroglycerini (1/100th of a grain) every four hours was given. The numbers in column A refer to the blood pressure in millimetres of mercury. The numbers in column B refer to the amount of urine in ounces per diem and pulse-rate per minute.

blowing systolic murmur, probably of mitral origin; capillary pulsation well marked. Blood pressure varied from 136 to 156 millimetres of mercury; pulse from 72 to 80; very little change during treatment in hospital. Diagnosis: Aortic incompetence and stenosis; mitral incompetence. He was discharged improved.

CASE B.—A male, aged 45 years, painter. From September, 1904, he had been unable to work and was confined to bed "on and off" for dyspnœa and orthopnœa. Since Christmas, 1904, had been tapped three times for ascites and had had œdema of abdomen and legs. Had been a moderate drinker. On admission on July 1st, 1905, he was thin and anæmic; apices of chest flattened; a good deal of expectoration; no evidence of tubercle. Cardiac pulsation very diffuse; apex beat in sixth space external to nipple. Heart beat very irregular and many confused murmurs to be heard. Blood pressure was from 148 to 166 millimetres of mercury; no alteration. No progress was made. Diagnosis: Aortic disease and mitral stenosis and regurgitation.

CASE C. A male, aged 59 years. There was no history of rheumatism or syphilis. He had been getting more dyspnœic for past 12 months but had only left off work for last six months; had been a moderate drinker. On Feb 5th, 1906, he was seen at the out-patient department and was given five grains of potassium iodide, with one minim of liquor trinitrini three times a day. Blood pressure was 230 millimetres of mercury. On the 12th at out-patient department he was not feeling so well. Blood pressure was 200. The mixture was omitted. On admission on Feb. 24th he was a big, stout man; he was very dyspnœic. The heart, especially the ventricles, was much enlarged. The apex beat was in the fifth space, one and a half inches external to the nipple; impulse was heaving; pulse was irregular. Loud systolic bruit over aortic area, traceable down to apex. Loud aortic second sound in aortic area. Radial arteries thickened but no waterhammer pulse and no capillary pulsation could be discerned. Diagnosis: ? fusiform aneurysm of aorta.

CASE D.—A female, aged 48 years. She had had rheumatic fever 34 years ago. She had been a fairly active woman until five weeks ago, when she became very dyspnœic and developed œdema of the legs. On admission on March 3rd, 1906, she was a large stout woman, very dyspnœic and cyanosed. Heart impulse was heaving; apex beat was half an inch external to nipple in fifth space; a short systolic bruit was to be heard at apex; no diastolic murmur. Respiratory sounds very noisy; no evidence of fluid or solidity. On the 4th blood pressure was 220 millimetres of mercury; pulse was 100; urine was 2½ ounces in past 24 hours. Venesection was performed, ten ounces being removed. On the 5th five grains of potassium iodide and one minim of liquor trinitrini were given three times a day. Urine was 29 ounces. On the 6th blood pressure was 208 millimetres of mercury; pulse was 80. On the 7th blood pressure was 180 millimetres of mercury; pulse was 84. During the previous night patient had four convulsive attacks with loss of consciousness. The mixture was omitted and hot packs were given. On the 8th blood pressure was 176 millimetres of mercury. Patient was now unconscious and had Cheyne-Stokes breathing. Venesection was performed, 15 ounces being removed. She died at 6 P.M. At the post-mortem examination the left kidney weighed one and a half ounces; there was hardly any normal substance left; it was granular and cystic on surface; fatty and fibroid degeneration was present. The right kidney weighed two and a quarter ounces; the condition was much the same as the left kidney though not so far advanced, and the cortex on section was fairly good. The lungs were

FIG. 3.

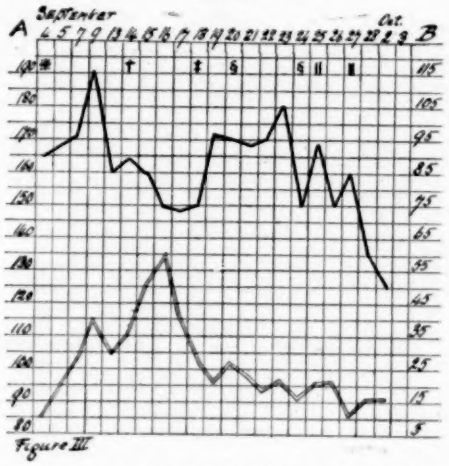
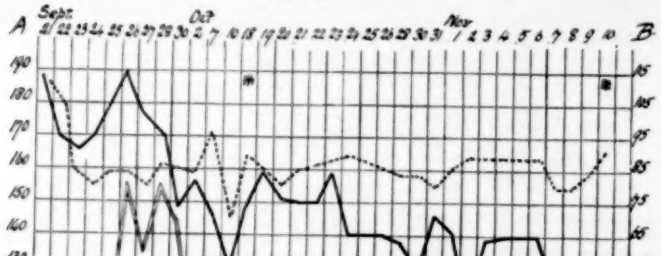


Figure III

CASE F, Class II.—Aortic and mitral regurgitation. *Two grains of calomel n. et m. Digitalin granule one daily. Five minims of tincture of strophanthus and three minims of liquor strychninæ were given three times a day. †Previous treatment stopped and four grains of theocin given three times a day. ‡Theocin stopped. From § to § four grains of theocin with one granule of digitalin given thrice daily. From ‖ to ‖ three-quarters of a minim of liquor trinitrini with previous strophanthus mixture given thrice daily. The patient died on Oct. 3rd. Post mortem there were great dilatation with slight hypertrophy of left ventricle and fatty degeneration of the cardiac muscle. Atheromatous patches over aortic and mitral valves; no endocarditis. The kidneys were not markedly diseased but the capsule was very adherent to each organ. The numbers under column A refer to blood pressure in millimetres of mercury. The numbers under column B refer to the amount of urine in ounces per diem and pulse rate per minute.

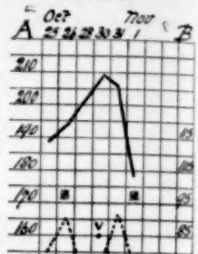
emphysematous and œdematous; hypostatic congestion of left lower lobe. The heart weighed 17 ounces, left ventricle was much hypertrophied. Mitral valve cusps much thickened; there were small but fairly recent vegetations on it. The aortic valve appeared to be normal.

FIG. 4.



Case G, Class II.—Primary kidney; secondary cardiac lesions. From * to * one minim of liquor trinitrini three times a day, increased to two minims three times a day after one week. The numbers in column A refer to the blood pressure in millimetres of mercury. The numbers in column B refer to the amount of urine in ounces per diem and pulse-rate per minute.

FIG. 5.



Case H, Class II.—Primary kidney. Secondary heart. From * to * one minim of liquor trinitrini was given every four hours. V, blood pressure after venesection (12 ounces were removed). The numbers in column A refer to the blood pressure in millimetres of mercury. The numbers in column B refer to the amount of urine in ounces per diem and rate of pulse per minute.

CASE E.—A man, aged 56 years. He was at work until three weeks before admission. No history of rheumatism; alcoholic history uncertain. On admission on August 12th, 1905, he was a large strongly built man; dyspnœic; very irregular pulse; heart much enlarged with many bruits; slight œdema of legs. He was discharged improved on Sept. 8th but readmitted on Oct. 15th, having been back to work. He had œdema of legs, ascites, very intermittent and irregular pulse, and was very dyspnœic. A trace of albumin was in the urine. Discharged on Nov. 11th improved. Diagnosis: mitral and aortic incompetence. The blood pressure in this case was 120 millimetres of mercury on admission, when the heart was obviously unable to carry out the task required of it. After three days' administration of diuretic pills (containing squill, mercury, and digitalis), the blood pressure rose to 170 millimetres of mercury, and kept between this level and 160 millimetres until the pill was discontinued, when it sank to 140 millimetres, where it remained until patient's discharge.

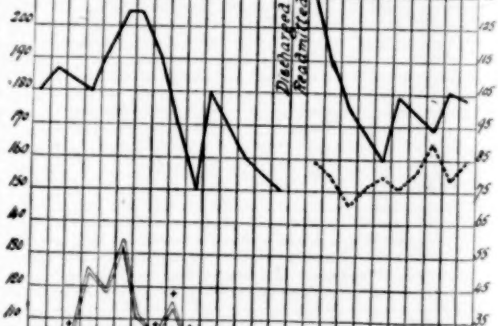
CASE F.—A man, aged 50 years. No history of rheumatism; he had been addicted to alcohol; he had had an attack of hemiplegia two and a half years ago from which he recovered after three months. On admission he was a stout flabby man, very cyanosed, and dyspnœic; he had much œdema of face, trunk, and limbs, marked ascites, and an enlarged prostate which had given him difficulty in micturition for some time past. Heart: apex beat heaving, irregular, external to nipple; loud systolic apical murmur and an aortic diastolic. Very little progress was made and the patient died after getting into a general pyæmic condition two months after admission.

CASE G.—A female, aged 41 years. No history of rheumatism; she had had dyspnœa for past two years. She had had five children (two dead) and was very bad during last pregnancy (youngest child was 15 months old). She had been getting worse lately and unable to do her work. On admission she was a thin, sallow woman; she lay in a semi-prone position; slight occasional hæmoptysis; some œdema of legs. Apex beat was in sixth space below nipple. Had reduplicated second sound over pulmonary area; loud systolic bruit over sternum at level of third costal cartilage and laboured first sound at apex. These sounds changed to definite presystolic and sharp loud first sound at apex, systolic bruit over tricuspid area, and systolic bruit over third right costal cartilages. Aortic second sound was soft. Some albumin in urine. Patient was discharged after seven weeks in hospital greatly improved in condition and with no albumin in the urine. Diagnosis: aortic stenosis, slight regurgitation; mitral stenosis, tricuspid regurgitation.

CASE H.—A female, aged 65 years. She was quite well up to 5 P.M. on the day of admission, when she was found clinging to a chair for support, and her friends noticed that her right side was paralysed. Very alcoholic history. On admission there was no loss of consciousness. Slight movement was obtainable in the right side, arm, and leg, but there was paralysis of the right side. Heart large; impulse in fifth space external to nipple, heaving in character; soft systolic bruit at apex. Hard second sound over aortic and pulmonary areas. Vessels hard and tortuous. Urine loaded with albumin. Patient insisted on leaving hospital against advice.

CASE J.—A male, aged 72 years. He was a hard drinker some years ago but since then had been a temperance lecturer and evangelist. He had suffered from dyspnœa for 18 months past. On admission on Jan. 16th he was a thin, wiry man, very dyspnœic; some œdema of legs. Pulse was very rapid and intermittent. Systolic and presystolic murmurs at apex. Radial artery very tortuous and hard. Large right pleural effusion. Patient was aspirated (right chest) three times when in hospital and was discharged after a stay of six weeks, somewhat relieved. After a fortnight he was readmitted in a much worse condition on Feb. 28th. He remained in hospital and was again aspirated and was discharged relieved on March 29th.

FIG. 6.



Case J, Class II., mitral stenosis and regurgitation and arterio-sclerosis. The figures under column A refer to the blood pressure in millimetres of mercury. The figures in column B refer to the amount of urine in ounces per diem and rate of pulse per minute. The + signs show where some of the urine has been lost and therefore the amount is under-estimated.

It will be noticed that in these cases there is a preponderance of aortic disease, though this class is not entirely limited to such cases. What is the significance of the rise of arterial pressure in this large group? Since in these observations we are taking not the mean arterial pressure but the maximum systolic pressure, it might be thought that the rise in pressure was due to the inadequacy of the aortic valves. The presence of a backward leakage through the valves will cause, if pronounced, a more rapid diastolic fall of pressure and the increased volume of blood in the dilated left ventricle will occasion an increased output of the ventricle at

each beat. The pulse oscillation must therefore be greater than in normal circumstances and there will be a larger difference between the mean arterial pressure and the maximum systolic pressure. This factor is not, however, sufficient to account for the very large rise in pressure observed in most of our cases, though it might be responsible for an increase of the maximum systolic pressure by 10 or 20 millimetres of mercury. Thus in Case E in Class I. the extent of the pulse oscillation was shown by the well-marked capillary pulsation which could be obtained. In this case, however, the arterial pressure was little above normal. In Class II. the rise of arterial pressure is not secondary to the heart disease but is primary. All those cases belong to that group to which Allbutt has drawn attention—namely, one characterised by a rise of arterial tension in later life. It will be noticed that the greater part of our cases are past middle age. As Allbutt has shown, the rise of arterial tension at extreme old age may in many cases be anticipated, so that we have, so to speak, a premature senility of the vascular system. Such cases have their natural termination in one of several ways. The overstretched vessels of the brain may give way with apoplexy as the result. More frequently, perhaps especially in the working-classes, the strain of maintenance of the arterial pressure at this great height is first felt by the heart. The breakdown occurs, therefore, in this organ and we may get cardiac failure with dilatation of the venous orifices, with or without the clinical symptoms of mitral and tricuspid insufficiency. In people engaged in manual labour, with constantly recurring rise of arterial pressure above its already abnormal height and often subjected to the poisons of alcohol or syphilis, it is the aorta which first shows signs of increased wear and tear, and it is on this account that aortic cases predominate among those which I have had the opportunity of observing.

Here, however, as in the primary heart cases, heart inefficiency cannot cause any lowering of arterial pressure. For some reason or other the high arterial pressure has in these cases become a necessary condition of existence—has become, in fact, the normal for the individual—and any heart failure at once calls into play the cycle of adaptive changes which we have discussed under the first class. At all costs the arterial pressure has to be kept up at the height which is normal for the individual and we therefore get, but in an exaggerated degree, the same picture of gradual increase in volume of circulating fluid, with a rise of pressure occurring first in the venous cavities of the heart and gradually spreading backwards along the veins towards the capillaries. It is in such cases, therefore, that we obtain the most extreme degrees of plethora and the most marked cases of general oedema. The pressure is raised throughout the whole vascular system and the mal-nourished capillaries allow a leakage in such quantities that the patient, as in Case H, Class II., becomes absolutely waterlogged.

Although the palliative treatment of this class of cases must run along somewhat similar lines to that of the first class it is evident that any lasting improvement can be obtained only by attacking that factor which is originally responsible for the breakdown of the heart—namely, the high arterial tension. If we can cause a permanent restoration of this pressure to the normal without interference with the general well-being of the patient, we shall have succeeded in removing the factor which caused the primary breakdown of the heart. It is only in such a way that we can hope to attain a permanent benefit of such a degree that we can speak of cure. Our difficulty in attaining this object is due to the fact that we have not yet a clear idea of the genesis of this raised arterial tension. In some cases the high arterial tension is associated with granular kidneys or with some form of renal mischief. The cardiac history of such cases is exactly similar to all the others in Class II., but the development of the disease is, of course, complicated by the renal inadequacy, and death in such cases may ensue by uraemia or associated disorders. In a large number of such cases there is no evidence of kidney mischief. The urine may be concentrated rather than dilute and albumin is a variable and inconstant constituent. In some of these cases the arteries are distinctly thickened and we might speak of arterio-sclerosis as the prime change. This thickening of the arteries is not, however, found in all the cases and when it is present it is doubtful whether it is not rather a change in the arteries—a hypertrophy, so to speak—which, like the change in the heart, is secondary to the high arterial tension. As Allbutt has shown, this rise of arterial tension may be frequently found in men who are apparently in first-rate health. An investigation of its causation will not be complete, therefore, until we can make a complete pressure census of a very large number of apparently healthy individuals. It is impossible to avoid the suspicion that the raised arterial tension is in some way toxic in origin and is due to the circulation in the blood of poisonous substances which may have a direct action on the blood-vessels or may require an increased blood pressure in order to secure their excretion by the kidneys. In certain cases this poison may be alcohol. In a number of others it is probably, as Allbutt suggests, engendered by overfeeding. It might be thought absurd to ascribe such an etiology to the cases of the poor patients which I have given above. The recent work by Chittenden has shown, however, that the physiological necessities of a man are far below those which have been generally assumed on the ground of Voit's and Pettenkoffer's researches and far below the amount of food prescribed by the appetite. A reference to Rowntree's book on "Poverty" shows that even the poorer classes when in constant work take an amount of food considerably above that laid down by Chittenden as necessary for the maintenance of health. Whereas in the adult an average income of 70 grammes of proteid is sufficient, the average diet of most people, whether in the working classes or not, contains over 125 grammes of proteid. In most individuals this slight excess is probably of very little consequence. There is no doubt, however, that a large class exists of individuals who are unable to dispose of excess of food above their daily requirements, especially if this excess be nitrogenous. I would suggest therefore that this condition of raised arterial tension is due to the circulation of poisons in the blood, and that in a number of cases the poisons are derived from the food and are due to an excess of income over expenditure. It is, of course, possible that in these cases there is an actual plethora—i.e., an increased volume of circulating blood—and that the raised arterial tension is due to this increase. This question, however, can be experimentally decided only by the actual estimation of the total volume of blood in a healthy patient with raised arterial tension by means of Haldane's CO method.

The question as to how much a rise of blood pressure is actually due to a large amount of over-feeding may have some light thrown on it by the following observations. A tuberculous subject, aged 21 years, who had been at the Mundesley Sanatorium for some five weeks and had gained in weight some 14 pounds, came to see me, and on taking his blood pressure I found it to be 158 millimetres of mercury. I thought this was of considerable interest and by the courtesy of Dr. S. V. Pearson, the medical superintendent of this sanatorium, I spent an afternoon in estimating the blood pressure of all the patients there. I may say that in this sanatorium enormous feeding, such as obtains in many other similar institutions, is not practised, but Dr. Pearson tries to obtain the maximum increase of weight with only a reasonable increase of food. Dr. Pearson kindly furnished me with a rough idea of the dietary of the institution, which is as follows:—

Smallest Diet.

	Breakfast.	Lunch.	Dinner.	Total.
Milk	500 c.c.	—	500 c.c.	= 1000 c.c.
Bread	70 grms.	40 grms.	40 grms.	= 150 grms.
Butter	25 ,,	15 ,,	10 ,,	= 50 ,,
Meat	80 ,,	30 ,,	60 ,,	= 170 ,,
Fish	—	50 ,,	—	= 50 ,,
Pudding	—	100 ,,	125 grms.	= 225 ,,
Potatoes	—	80 ,,	80 ,,	= 160 ,,
Greens	—	40 ,,	40 ,,	= 80 ,,

This diet is estimated in a very rough way, but the totals being under- rather than over-estimated, gave total proteid, about 179 grammes; total nitrogen, 21 grammes; and total calories, 2650. The women's diet approximates to this but contains about 30 grammes more of cooked meat. The largest dietary was as follows:—

	Breakfast.	Lunch.	Dinner.	Total.
Milk	500 c.c.	500 c.c.	500 c.c.	= 1500 c.c.
Bread	90 grms.	60 grms.	60 grms.	= 210 grms.
Butter	40 ,,	15 ,,	15 ,,	= 70 ,,
Meat	120 ,,	80 ,,	80 ,,	= 280 ,,
Fish	—	70 ,,	70 ,,	= 140 ,,
Pudding	—	150 ,,	150 ,,	= 300 ,,
Potatoes	—	90 ,,	90 ,,	= 180 ,,
Greens	—	50 ,,	50 ,,	= 100 ,,

On estimation this diet contains about: total proteid,

212 grammes; total nitrogen, 34 grammes; total calories, 4016.

The blood pressures of 18 patients were taken. Each one was made to rest for some minutes before observation reclining on a lounge chair or in bed, and several successive observations were made until the lowest possible reading was obtained with the following results: average age, 30·08 years; average blood pressure, 140·18 millimetres of mercury. As a control experiment the nurses and sisters were tested, including a somewhat anæmic subject whose abnormally high blood pressure was probably due to previous exertion, with the following result: average age, 28·8 years; average blood pressure, 129·6 millimetres of mercury. It must be noted that all these individuals pursued the same life as the patients—that is, in the open air night and day and probably had very hearty appetites. Of the patients the highest blood pressure was in the one referred to in the first instance who was progressing well and had gained 14 pounds in five weeks' treatment. It appeared to me suggestive that the examples of the highest blood pressure occurred in those patients who were clinically rapidly improving and had been under treatment the shortest time, that those who had been under treatment for a considerable time exhibited lower blood pressure, and, except for one instance, those who were not doing so well exhibited a blood pressure only a little above the normal range.

I think that these facts have a definite bearing on the question of blood pressure in relation to heart disease and I should also like to suggest that the enormous meat factor in the diet of athletes in training has had some considerable influence in multiplying the number of cases of "athletes' heart," cases which are either of an "incompetent aortic" nature or of the "dilated and hypertrophied heart" type. It would be interesting to compare the effects of severe training on the circulatory mechanism on the one hand of those training on the old type of diet and on the other hand of those who were on a "Chittenden diet."

Importance of blood pressure determination for treatment.—Whatever may be the etiology of the raised arterial tension in such cases the results I have brought forward will, I think, serve to demonstrate the great importance of a reading of arterial pressure in all cases in which we have to treat the cause of failing heart. It enables us in most cases at once to relegate the case to one of two classes. In the first class it is the heart muscle to which we have to direct the whole of our attention. If we bleed it is to relieve temporarily the distended right heart. If we give oxygen it is to improve the nutrition of the heart and to relieve it in cases of mal-oxygenation by relaxation of arterial spasm. If we give digitalis it is for its steadying and anabolic effects on the heart muscle. On the other hand, in the second class our first thought must be the reduction of the high pressure which has worn down the working power of the heart muscle. Bleeding in such cases would not only give a temporary relief to the heart. It would also, by affording a stimulus to building up of the tissue, enable the organism to apply its nitrogenous waste products to this purpose, and so tend to the purification of the circulating fluid. On the assumption that there is a plethora in the widest sense of the term and that it is primarily due to an excess of income over expenditure, the treatment which would seem to be indicated would run on the old-fashioned lines of bleeding and purging. At the same time there must be a complete reformation of mode of life. The income must be diminished by limitation of food; the output must be increased where necessary by regulated exercise. It is probably in cases such as these that Oertel's methods of treatment of heart disease have been most successful. Whether, however, limitation of fluids in the diet is desirable I am inclined to doubt. Although increased fluids tend to the perpetuation of the plethora present in these cases too rigid a restriction of fluid must seriously hinder the excretion of the hypothetic toxic substances which we have assumed to be the cause of the disorder.

These suggestions for treatment must be put forward at present only tentatively. Although I have Professor Allbutt's support in the recommendation of restriction of diet and exercise, the treatment is founded on what is at present only a hypothesis. Before this hypothesis can be established we must show that in patients, still in excellent health but with an abnormally high arterial pressure, it is possible to reduce this pressure to, say, 120 millimetres of mercury by exercise and restriction of diet without interfering with the physical well-being of the patient. Most of the cases which I have dealt with above are already too far gone for any hope of permanent alleviation and the treatment in these has had to be palliative rather than curative. By the use of nitrites it is possible to lower the pressure in some of these cases and sometimes to give some measure of relief to the heart and to the patient. In this mode of treatment, however, we are attacking the result, and not the cause, of the disease and cannot therefore expect any lasting benefits to result from our treatment.

These brief and somewhat disjointed notes have been collected at various periods during the carrying out of a general practice. They are therefore necessarily incomplete and of an amateur character, but none the less I hope that they contain matter of some interest to the profession. I must express my indebtedness in the first place to my brother, Professor Starling, for the valuable help he has given me during the preparation of this paper, especially in regard to the physiological interpretation of many of the phenomena set forth herein; in the second place to Dr. Martin for the loan of notes and papers relating to the estimations of blood pressure in various conditions; and last, but not least, to the medical staff of the Norfolk and Norwich Hospital for their kind permission to make full use of the cases under their charge in that hospital.

Norwich.

A STUDY OF THE STREPTOCOCCI PATHOGENIC FOR MAN.

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(*Concluded from p. 782.*)

VI. GRAPHIC REPRESENTATION OF RESULTS OBTAINED BY EMPLOYING GORDON'S TESTS UPON LARGE BODIES OF STREPTOCOCCI.

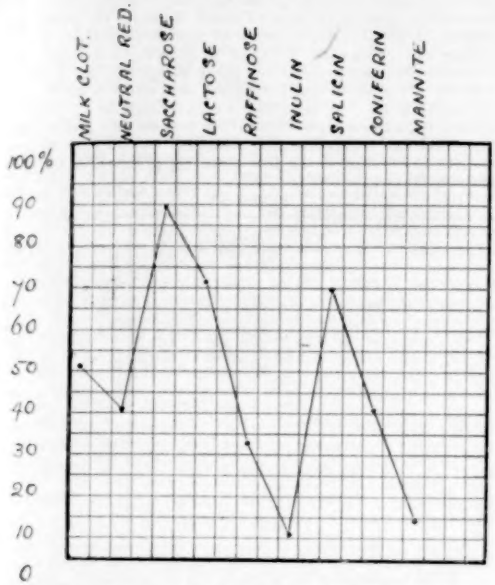
WHERE a sufficient number of specimens of streptococci has been examined from any one source, or any one disease, it is possible to express the general chemical facies of the forms found by a curve based on the *percentage* frequency of a positive reaction to each of Gordon's tests, taking these in constant order. Thus, in Fig. 2, 50 per cent. of all the colonies examined produced clotting in milk, 90 per cent. gave a positive reaction with (i.e., formed acid in) saccharose, and so on. By this means, as Gordon has already shown, broad similarities and differences become apparent, and if the number of specimens upon which the curve is based is sufficiently large, minor differences in reactions are more or less effaced. We have constructed a number of such graphic representations of our results and we subjoin a few of these as examples of this mode of treatment.

These curves illustrate several important points. The curve shown in Fig. 2 contains such a preponderance of saprophytic forms that the inclusion of 20 per cent. of parasites scarcely distinguishes it from that seen in Fig. 7. We have nevertheless included it as offering the most complete general streptococcal curve available. A comparison of Figs. 3 and 7 shows the broad distinctions between the parasitic and saprophytic streptococci. The pneumococci in Fig. 4 offer a very different picture owing to the high raffinose—and relatively high inulin—percentages, while the glucosides stand at a very low level. The contrast between Figs. 5 and 6 is of special interest, as illustrating the wide distinctions between the streptococci concerned in acute suppurative processes and those found in malignant endocarditis; the latter, as we have previously urged, correspond very closely with the common saprophytes of the alimentary canal, as is seen by comparing Figs. 6 and 7. Lack of space prevents our enlarging further on these curves, which must be left to speak for themselves.

VII. THE BEARING OF THESE INVESTIGATIONS UPON DIAGNOSIS AND TREATMENT.

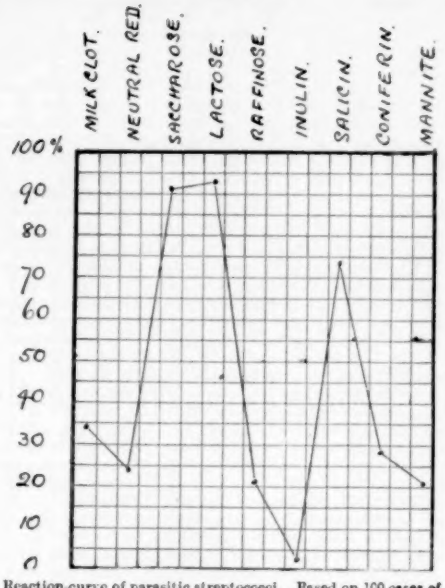
Accurate diagnosis in any case of streptococcal infection,

FIG. 2.



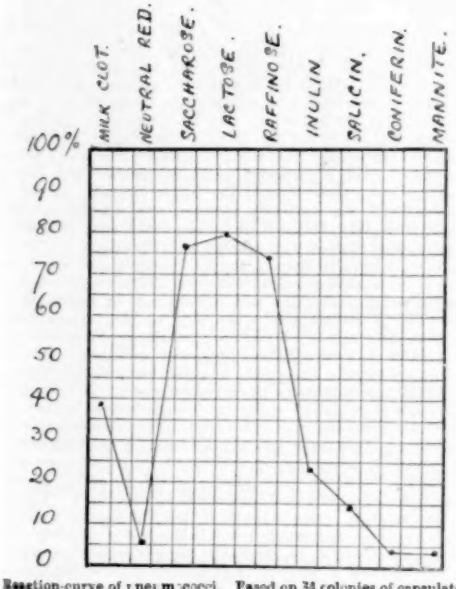
General reaction-curve of all streptococci (saprophytic and parasitic) excluding pneumococci. Based on 1087 colonies, mainly saprophytic. Only about 200 parasitic colonies are included.

FIG. 3.



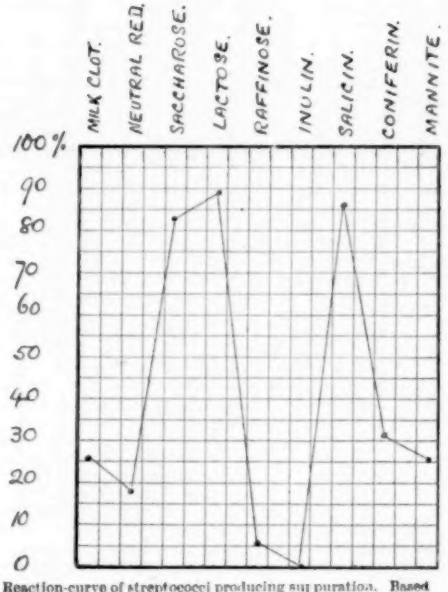
Reaction-curve of parasitic streptococci. Based on 100 cases of definitely streptococcal disease.

FIG. 4.



Reaction-curve of pneumococci. Based on 34 colonies of capsulated streptococci.

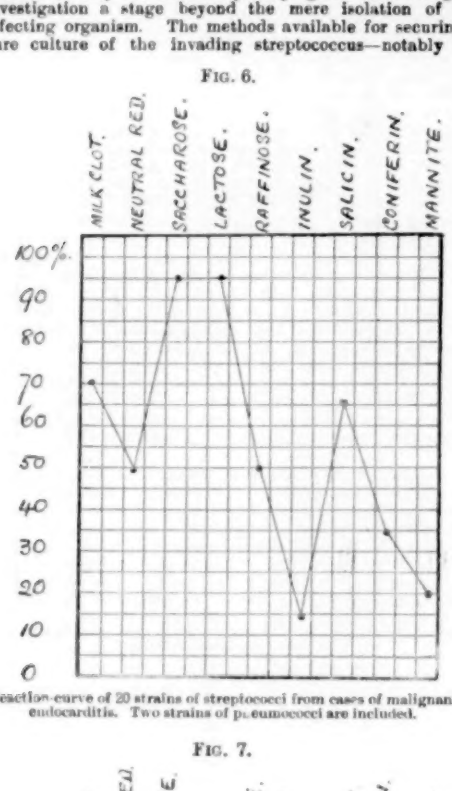
FIG. 5.



Reaction-curve of streptococci producing suppuration. Based on 35 colonies definitely associated with suppurative processes in man. Pneumococci are excluded.

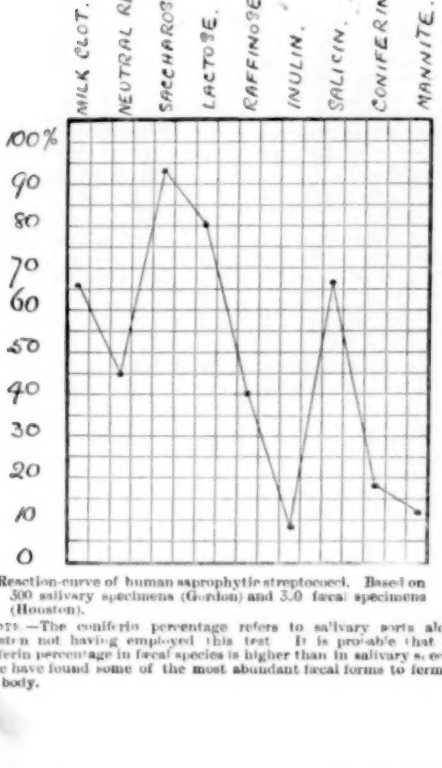
viewed in the light of the facts which we have set forth above, can only be obtained by carrying the bacteriological investigation a stage beyond the mere isolation of the infecting organism. The methods available for securing a pure culture of the invading streptococcus—notably the technique of blood examination—have been so improved in recent years that no great difficulty is usually encountered in this process. The organism, once isolated, must be subjected to a full investigation on the lines already laid down, which, to be complete, should include not only Gordon's nine tests but also morphology in broth culture, capacity for growth on gelatin at 20° C., and, if possible, inoculation into a mouse as soon as may be after isolation in pure culture. As a rule it is not difficult to refer any given streptococcus to one or another of the types which we have laid down above as provisional species. After what we have said as to the frequency of intermediate forms, it is not easy to present any hard and fast diagrammatic schedule, but it may be convenient to summarise the five main types to which we have given names as follows:—

FIG. 6.



Reaction-curve of 20 strains of streptococci from cases of malignant endocarditis. Two strains of pneumococci are included.

FIG. 7.



Reaction-curve of human saprophytic streptococci. Based on 300 salivary specimens (Gordon) and 30 faecal specimens (Houston).

NOTE.—The coniferin percentage refers to salivary sorts alone, Houston not having employed this test. It is probable that the coniferin percentage in faecal species is higher than in salivary species, as we have found some of the most abundant faecal forms to ferment this body.

TABLE IX.

	Types.	Reactions with Gordon's nine tests.									Growth on gelatin at 20° C.	Morphology.	Pathogenesis for mouse.
		Milk clot.	Neutral red.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Coniferin.	Mannite.			
1	Streptococcus pyogenes	·	·	+	+	·	·	+	·	·	+	Longus.	+
2	,, salivarius	+	+	+	+	+	·	·	·	·	±	Brevis.	·
3	,, anginosus	+	+	+	+	·	·	·	·	·	±	Longus	+
4	,, faecalis	+	+	+	+	·	·	+	+	+	+	Brevis.	·
5	Pneumococcus	+	·	+	+	+	+	·	·	·	·	,,	+

Having ascertained the type of streptococcus concerned in any given case one is in a much better position to judge of the possible source of the organism, to form a prognosis, and to initiate treatment.

We venture to believe that the results of the investigations which we have detailed in this communication may have a very direct and important bearing upon the treatment of streptococcal infections. Already, in our preliminary remarks, we have hinted at a possible line along which serum therapy may advance with more hope of success than this treatment at present enjoys. This development consists in adapting the immune serum employed in any particular case more closely to the actual organism causing the disease. If, as we have shown, different pathogenic streptococci exhibit marked differences in their metabolic reactions *in vitro*, it is highly probable that the effects of these streptococci upon the tissues are associated with similar marked differences in chemical action. And if this be true, it follows that a more complete antagonism between the serum and the organism may be expected if the former has been derived from an animal specifically immunised against the latter. In other words, better results may *a priori* be expected from a powerful univalent serum than from a polyvalent one, even though the latter contains as one of its ingredients an antibody against the special streptococcus concerned. It must be remembered that at present the polyvalent sera on the market are polyvalent only in the sense that they have been prepared by the use of a number of strains of streptococci derived from different sources, but not necessarily presenting any differences in chemical reaction. It is probable that the bulk of the strains which have hitherto been employed in producing polyvalent sera are referable to streptococcus pyogenes, and such sera may be in effect largely univalent, however various the diseases from which the organisms have been derived. A truly polyvalent serum would be made by inoculating a horse with each of the different types of streptococci considered in the preceding sections until the animal became immune to each type. Such a serum might well be of value in urgent cases pending the isolation and testing of the invading streptococcus, which usually occupies three or four days. But the soundest method appears to us to keep a special horse for each type of streptococcus: in this way a more or less specific serum would be available for use against each type of organism and it may fairly be presumed that the specific antibodies in such sera would be more potent than when forming only one element in a polyvalent serum.

Following out the above idea we have already had prepared for us, by the courtesy of Messrs. Burroughs and

Wellcome, a univalent serum for use in cases of infection by streptococcus pyogenes, in the manufacture of which some five or six strains tested by us were exclusively employed. This univalent "pyogenes serum" has already given good results in some cases, and in one, at least, where a polyvalent serum had proved less satisfactory in its effect. It is as yet too early to speak confidently of its advantages over the polyvalent sera in ordinary use. With univalent sera ready to hand against the different types of streptococci the appropriate one could be employed as soon as the organism in any particular case was isolated and tested. This would obviate the alternative course of preparing a special univalent serum *after* the separation of the organism, as carried out by one of us (T. J. H) on two occasions in cases of malignant endocarditis.[1] This method is impracticable in all but the most chronic cases, for it involves the loss of valuable time; no serum can be expected to be rich in antibodies in less than from six to eight weeks.

The nature of the antibodies in the serum of an animal immunised against streptococci is presumably opsonic. There is no evidence that they are antitoxic or directly bactericidal. The question may properly be raised as to the precise specificity of such opsonins within the group of streptococci. Bulloch and Western, in a recent paper,[2] have demonstrated that as regards staphylococcus aureus, the tubercle bacillus, and bacillus pyocyaneus perfectly distinct opsonins are concerned. These three organisms, however, belong to distinct genera, and we know of no evidence as to the specificity of opsonins within the limits of a single genus. Lack of time has alone prevented our attacking this interesting problem amongst the streptococci. It may be that there is a single opsonin against all streptococci, but in the absence of any evidence to this effect such a presumption would be exceedingly unsafe; such collateral evidence as may be found amongst the agglutinins is against it.

A new chapter has recently been opened in the treatment of streptococcal infections by the guarded use of specially prepared vaccines (Wright). The good results which have undoubtedly attended the injection of dead cultures of staphylococci in chronic infections by these organisms will possibly also follow a similar mode of treatment in diseases of streptococcal origin. This treatment by vaccination may prove more successful than the use of antistreptococcus serum, more particularly in cases of chronic infection. Many cases of streptococcal infection are, however, of an acute and rapidly fatal character and it may well be that serum treatment will prove better adapted for such cases than vaccination. In any case it remains a matter of paramount importance that the type of streptococcus concerned in the case should be recognised. Given the ready means for recognition of the different types of streptococci, specific vaccines of known strength might be ready at hand as soon as the diagnosis has been established.

Pathological Department, St. Bartholomew's Hospital.

THORACOTOMY FOR TRAUMATIC HÆMOTHORAX DUE TO A WOUND OF AN INTERCOSTAL ARTERY.

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AND
JOHN ALLAN, L.R.C.P., L.R.C.S. EDIN., L.F.P.S. GLASG.,
EXTRA SURGEON TO THE GLASGOW CENTRAL DISPENSARY.

WOUNDS of the intercostal arteries, except as part of severe injury to the chest wall, are comparatively rare, and especially so when the injury occurs to the larger or superior branch. This vessel from its anatomical position—in the groove on the lower part of the internal surface of the rib—is well protected from injury by the overlapping inferior border of that bone; stab wounds which penetrate the chest wall usually miss the vessel or at most only divide the smaller branch which runs along the lower part of the intercostal space. The following case occurring in the practice of one of us (J. A.) is of interest.

The patient, a man, aged 46 years, accidentally fell through a glass door on Dec. 22nd, 1905, and received a V-shaped wound of the chest wall in the sixth left intercostal space and distant about 11½ inches from the mid-sternal line; the apex of the V pointed downwards and inwards towards the umbilicus. The general shape of the wound beneath the skin flap was triangular, the apex being immediately below the sixth rib. There was free oozing from the depth of the wound but it was quite impossible to detect any spouting point. With antiseptic precautions a sterile probe was carefully passed, when it was found that the instrument penetrated in a slanting direction towards the lower border of the sixth rib and to a depth of four inches from the skin margin. The wound was next slightly enlarged and explored with the finger but no pieces of glass, bare rib, or definite communication with the pleural cavity could be found. The wound was carefully cleared of blood clot and packed with sterile gauze. The patient had no reactionary temperature and next day there was no stain showing through the dressings. He had passed a fair night but complained of slight pain on respiration and had a little cough. There had been no hæmoptysis. On the 24th when the wound was dressed the packing was found extruded and the skin surfaces adherent; as there was no discharge the packing was not reinserted. The temperature was normal, the pulse was 84, and the respirations were 20. Friction sounds were heard in the region of the wound and from that level downwards towards the base of the lung. Vocal fremitus and resonance were not altered and the patient still complained of pain on respiration and of cough. He continued pretty much in the same condition for the next two or three days, the difference in breath sounds, on percussion, in vocal fremitus and vocal resonance not being much different in comparison with the other side. On the 28th, six days after the injury, the breathing was more difficult and the patient complained of a choking sensation. Comparative dulness was present from the level of the wound to the base of the lung, both in front and at the back, the upper line of the dulness altering with change of position. The apex impulse was displaced to within half an inch of the left sternal margin. The respiratory murmur was diminished in intensity. The respirations numbered 24 per minute, the pulse was 86 and the temperature was normal. An exploratory needle was introduced into the pleural cavity and blood-stained fluid was found, which, however, contained no pus cells and no micro-organisms. On the night of the 28th the patient when seen by one of us (D. D.) had orthopnœa and complained much of a choking feeling when asked to lie back in bed. The movements of the chest wall were free on the right side but limited on the left; comparative dulness was present over the base of the lung behind but was not so marked in front. The patient appeared to be in a serious condition and a diagnosis of hæmothorax due to a wound of the upper branch of the sixth intercostal artery was made. Operation was decided on and thoracotomy was performed as the only feasible means of securing the bleeding point and of relieving the urgent symptoms due to the intrathoracic hæmorrhage. An incision was made in the line of the original wound and the tract of the laceration was explored; the apex of the wound was found just below the sixth rib and hæmorrhage was taking place from both proximal and distal ends of the divided intercostal artery. A small opening which admitted the point of a pair of dressing forceps was found in the parietal pleura and from this opening the blood escaped from the chest at considerable pressure; this opening was enlarged, giving exit to a large quantity of blood, considerably over a pint being evacuated. The blood was allowed to escape from the chest slowly by soaking through a pad of gauze, in order to minimise as much as possible the effect of sudden relief of intrathoracic pressure. The periosteum over the sixth rib was incised and stripped down with an elevator; the two ends of the divided intercostal artery were raised from the groove on the posterior surface of the rib and tied. A drainage-tube was inserted and the wound was partially stitched and packed. After the operation the respiration was much improved and the pulse was of good volume and tension. During the operation the anæsthetic (chloroform) gave some anxiety but the difficulty experienced was successfully overcome. On the 29th some serum was present on the dressings but no fresh hæmorrhage had taken place; the patient had had some sleep in snatches and

[1] THE LANCET, July 16th, 1904, p. 143.
[2] Proceedings of the Royal Society, B., vol. lxxvii., 1906, p. 531.

complained much of thirst. The pulse was 90 per minute, of good volume and tension. The respirations were 18 and the temperature was 100° F. On the 30th the patient was fairly well, having slept fully nine hours. There was no stain on the dressings. The temperature was 101°, the pulse was 96 and the respirations were 24. On the next day (Dec. 31st) the wound was dressed and the drainage-tube was removed, some sterilised gauze being inserted in its place. Examination of the chest showed the presence of pneumothorax with considerable displacement of thoracic viscera; the apex impulse was half an inch to the right of the sternum and the whole left side of the chest was hyper-resonant. On Jan. 2nd, 1906, the patient was not so well, the temperature registering 100·5°, the respirations numbering 30, and the pulse being 120, but it was found that he had been taking oranges and he complained of pain in the epigastrium. He was given castor oil and on the following day he felt much better. He complained of palpitation and some friction was heard in the region of the wound. For the next few days the patient rapidly improved, the temperature fell to normal, the breath sounds became audible over the lower part of the left chest, and the apex gradually resumed its normal position. Breathing exercises were given by means of a Wolff's bottle. The wound was quite healed on Jan. 13th, a fortnight after the operation, no pus being present from first to last. The patient went out against directions and got a chill which kept him in bed for a few days, but he was practically well at the end of January and able to undertake a journey from Glasgow to Portsmouth, subsequent reports of his condition being satisfactory. At the time that he left the measurements of the chest showed a difference of three-quarters of an inch between the right and left sides at the level of the sixth rib. The temperature was normal and the respirations numbered 18. The patient felt no pain. The breath sounds were heard all over the chest on the left side but were, if anything, somewhat fainter than on the right side.

One or two points in connexion with this case are worthy of note and are, in our opinion, of sufficient interest to warrant the case being recorded. The rarity of the injury and the fact that hæmorrhage took place into the pleural cavity without any pneumothorax being present till after the chest had been opened into surgically are important features. There was undoubtedly an opening in the parietal pleura from the first produced by a pointed fragment of glass, but the wound passed in such a direction—i.e., piercing first the external intercostal muscle, then between the muscles, and then passing through the internal muscle about one inch farther back—that the overlapping tissues evidently acted like a valve and prevented the entrance of air, as they also did the exit of blood in an outward direction from the divided artery. Fortunately for the patient, although the operation was performed at his home, the aseptic precautions proved effectual and no pus was seen. Had empyema developed his chances of recovery would have been remote considering his general condition from loss of blood and shock. During the first two or three days after the operation the patient's danger appeared to arise mainly from a tendency to syncope due to the displacement and consequent embarrassment of the heart. When absorption of the air began he rapidly improved.

Glasgow.

TWO CASES OF HEPATIC ABSCESS TREATED BY THE TRANS-PLEURAL OPERATION.

BY H. TAYLOR, M.A. CANTAB., F.R.C.S. EDIN., M.A., M.D. DUB.,

SURGEON-CAPTAIN, ARMY MEDICAL RESERVE.

I HAVE ventured to publish these two cases because they would seem to belong to that category in which Jacobson[1] includes "those grave and difficult cases where a hydatid cyst or hepatic abscess instead of making its way towards the abdominal wall works upwards, thrusting up the base of the lung" and so have to be approached by a transthoracic incision.

CASE 1.—A man, aged 21 years, of the 4th Battalion Manchester Regiment, was transferred from Northampton to Colchester Station Hospital for the purpose of being invalided from the service. He was, however, admitted to my wards for observation, the history of the case being that he had suffered from dysentery with an "enlarged liver" while in Ladysmith during the siege. His face was sallow and his features were somewhat "drawn" and he had a moderate diarrhœa with dark-coloured offensive pultaceous stools but with no pus or blood. There was no definite swelling to be defined, but there were a sensation of increased resistance on palpation below the costal margin and some dulness at the base of the right lung. There was no history of syphilis or malaria, the spleen could not be felt, and there were no rigors or sweatings. As there was no urgency in his symptoms and as the liver had been explored with a negative result before his transfer to Colchester, it was decided after a consultation to await more definite indications for treatment. The diarrhœa was easily controlled by a little opium, salol, and bismuth and the patient's temperature rose to 100° F. on two occasions only. On Oct. 29th, some three weeks after admission, however, the man complained of considerable pain and his temperature was found to be 102°. On the next morning, therefore, after preparations had been made for operation if necessary, the liver was again explored and after two or three attempts a cavity containing typical liver pus was entered at a depth of some three inches, the needle being between the eighth and ninth ribs, approximating to the post-axillary line. The abscess appeared to be one of those which instead of working downwards and outwards to the parietes was extending upwards and backwards to the hinder part of the liver. I therefore determined to adopt the transthoracic route in preference to the ordinary subcostal transperitoneal or subpleural intercostal incisions. The needle being left in as a guide and chloroform having been administered, an incision some three or four inches long was made over the ninth rib and about two and a half inches of it were excised, the pleura and diaphragm were cut through, and the liver was exposed. A strong suture was passed deeply through the liver substance and through the diaphragm and integuments at each end of the incision, thus anchoring the viscus securely to the wound, and the pleural cavity was then sutured off as quickly as possible. Very shallow and interrupted respiration supervened on the admission of air to the pleural sac and the patient became very cyanotic, but he rapidly recovered as soon as the cavity was securely sealed. The liver and the edges of the diaphragm were fixed by some further sutures to the deeper layers of the wound, a dressing was applied, and the patient was sent back to the ward, as it was decided to wait for a day or two to allow adhesions to form before proceeding to open the abscess. This was done on the third day after the operation and about two and a half pints of chocolate-coloured pus having been evacuated the cavity was gently syringed out with iodine water. The discharge gradually ceased and on Dec. 7th the cavity had so contracted down that a tube barely one and a half inches long was with difficulty retained in the wound. On the morning of Dec. 8th the temperature, hitherto normal since the opening of the abscess, was found to be 99·6°. While the wound was being gently syringed out with 1 in 40 carbolic lotion the patient suddenly complained of great pain in the epigastrium, became pallid, broke out into a profuse perspiration, and vomited. I was considerably alarmed, fearing that the syringing—gentle as it had been—had broken through some attenuated portion of the wall of the abscess cavity and possibly infected the peritoneum. A quarter of a grain of morphine was injected and by the evening the pain had abated and the vomiting had ceased, but the abdomen, though soft and moving easily on respiration, was somewhat distended. The temperature continued to fluctuate between 99° and 102° and a suspicion arose that there was a collection of pus in front, either intrahepatic or between the liver and the parietes, and on the 22nd a definite area of dulness being defined an incision was made just below the costal margin and a pint of creamy inodorous pus was evacuated. The temperature fell to normal that evening and the patient made a good and uninterrupted recovery.

CASE 2.—A man belonging to the 5th Royal Irish Lancers was admitted to one of the medical wards in Colchester Hospital on Oct. 7th, 1902. He had had dysentery at Ladysmith and had been operated on at Nauwport for abscess of the liver and a quart of pus was evacuated. He was invalided home and was subsequently admitted to hospital on the above date. He had suffered more or less continuously

[1] Jacobson: Operations of Surgery, vol. ii., p. 351.

from diarrhœa for 12 months and on admission his urine was found to contain an appreciable amount of albumin. From the notes of his case it would appear that after a rigor his temperature had risen to 103° F., falling to 100° after a profuse sweating. It had then remained normal for a few days but a repetition of the rigors and sweatings had occurred. A consultation was held and the man was transferred to my wards for operation. Next day an exploring syringe was inserted in practically the same position as in the former case and pus having been found a method similar to the previous one was pursued. On exposing the surface of the liver a thin flaky pus was seen welling up from around the needle which had been left *in situ*; the wound was packed with gauze whilst the pleural sac was sutured off and the liver was fixed to the deeper planes of the wound. On opening the abscess, which was done immediately, not more than one and a half ounces of unhealthy-looking pus escaped. The temperature after the first three days fell to normal and remained so throughout his convalescence, which was uneventful. He was discharged to a sick furlough looking in good health but still with a small amount of albumin in the urine.

In the first operation when the pleural sac was opened the patient's condition from threatened respiratory failure became alarming from the action of the left lung being impeded by the pressure of the pillow beneath the chest and by the pressure of the abscess and from the presence of air in the right pleural cavity. He was turned over on his back so far as was consistent with the continuation of the operation and as soon as the cavity was shut off the breathing became normal. It is difficult for me—even if the second abscess was in existence at the time of the first operation and was overlooked, though the character of the pus it contained is against the view that it was of the same nature as that of the larger collection—to account for the disconcerting symptoms which intervened so suddenly while gently syringing the wound and partially obliterated sinus. Though it has been urged that liver pus is sterile, the entrance into the peritoneal cavity of carbolic lotion and abscess débris must have inevitably produced a more or less limited peritonitis, but the symptoms of peritonism readily disappeared under treatment with enemata and sulphate of sodium. Some small perforation may have taken place on the anterior surface of the liver, resulting in a localised abscess limited by adhesions. In the second case the numerous rigors, the high temperature, the profuse sweats, and the small size of the abscess and the character of the pus seemed to suggest a possible pyæmic origin, but the wound healed rapidly and there was no interruption of the apyrexia throughout the recovery.

Limited as my experience is in the operative treatment of hepatic abscess, I submit with all deference the opinion that it is not always advisable to rely on the use of any of the various special instruments—trocars and so forth—to the exclusion of ordinary surgical procedures, for frequently those cases in which efforts have been made for their treatment by the use of such specially devised apparatus have eventually to be submitted to an excision of a portion of a rib to insure efficient drainage. In the second case in which though the abscess was close to the surface of the liver there were no diaphragmatic adhesions and in which there was unhealthy pus welling up copiously around the needle, nothing but disaster, I think, must have followed the use alone of any form of trocar and cannula. And I venture to think that such stabs in the dark, or at least into an obscurity, are out of place in those cases which, unless there are extensive and firm adhesions present, a condition of which we can never feel assured without an incision, can only be satisfactorily grappled with by one of the accepted surgical methods.

My thanks are due to Major W. G. Beyts, R.A.M.C., Civil Surgeon W. Rice, and the late Civil Surgeon J. J. O'Halloran for their valuable assistance in these two cases.

A RUSSIAN PIONEER INSTITUTION FOR DEAF-MUTES.—At the beginning of January, 1907, says the *Novoe Vremya*, it is proposed to call a pan-Russian congress of teachers and caretakers of deaf-mute children in commemoration of the introduction into Russia of the education of deaf-mutes for the first time, in the experimental school for deaf-mutes in Pavlovsk, founded 100 years ago by the Empress Marie Theodorovna.

ENDEMIC HÆMATURIA.[1]

BY PHILIP G. STOCK, M.R.C.S. ENG., L.R.C.P. LOND., D.P.H.,
LATE CAPTAIN, R.A.M.C.

THE following notes, founded on 65 cases of endemic hæmaturia which occurred amongst the troops in South Africa in 1902, are brought to notice for two reasons: (1) they throw some light on the incubation period of the disease; and (2) because a new line of treatment is suggested which offers some hope of a definite cure. Endemic hæmaturia has been observed for many years; both its frequency and the occurrence of vesical calculi were remarked on by the French surgeons during the invasion of Egypt by Napoleon, but it was not until 1851 that Bilharz discovered the bilharzia hæmatobia in Cairo. Since then it has been observed over practically the whole of the African continent, to which, with the exception of the Mauritius, it was thought to be confined; but lately cases have been reported from Arabia, Cyprus, Antigua (W.I.), India, and even in England, which would point to its having a wide geographical distribution; in Egypt it is a common disease and a fruitful cause of urinary calculi. In South Africa I have collected information which points to its being widely distributed, and cases have been traced to the Vaal, Orange, and Apis rivers, Pretoria, M'Nkandu, Newcastle, the Mooi and Klip rivers, Umzindin and Maritzburg, and streams at Middleburg, Cape Colony, and in the Transvaal, whilst in the Rustenburg valley it is truly endemic.

The bilharzia hæmatobia is a trematode worm in which the male and female reproductive organs occur in separate individuals. The male worm is of a whitish colour and measures about 16 millimetres in length; the female is about 20 millimetres long and lies in the gynæcophoric canal of the male with her ends protruding; the eggs, which it is stated can be distinguished in the uterus, appear in the patient's urine as bright, translucent oval bodies, with a smooth surface and a thin non-operculated shell, possessing a spine situated at one end. It is stated in the text-books that this spine is sometimes situated laterally, this being especially the case when the disease involves the rectum, and the ingenious idea has been advanced that this is due to the greater pressure exercised by the fæces as compared with the urine, but in the many fresh specimens I have examined I have failed to find an ovum with a spine situated laterally.

According to Professor Looss the lateral spine is caused by the egg not being able to take up its normal position in the oötype but whilst, as mentioned before, I have never discovered this lateral placement in fresh specimens, in those which have been mounted a shrinkage may ensue giving a false impression as to the true position of the spine. The ovum contains a ciliated embryo which can be hatched out by mixing some of the urine containing it with water, when it soon acquires a rapid movement, often changing its form. Should the embryos become hatched out in the urine they quickly die and even in water they quickly disappear; the longest period that they have been kept alive is about 36 hours. Sonsino, however, states that they penetrate the body of some species of mollusc which, becoming transformed into a nurse (or redia), produces in its interior a generation of larvæ which in their turn escape and enter the body of the definite host to become mature worms.

I have endeavoured to repeat the observations of Sonsino, but so far without success, and this portion of its life-history cannot be definitely settled; it seems more likely that the embryo itself enters the human host, there to develop into the young worm. That it gains access to its human host or to the monkey, in which it has been found, by means of drinking water is, I think, borne out by the following facts. 1. An epidemic occurred amongst the men of the 8th Hussars stationed at Pretoria in 1902. The camp was situated on the hills to the north-west of the town and it was the custom of the men to bathe in the spruit (Skinner's spruit) which ran along the bottom of the camp. 43 cases occurred and in all a history of having either drunk the water or bathed in the spruit was obtained. 2. Whilst monkeys undoubtedly drink, it is improbable that they ever bathe.

[1] Summary of a paper read before the Transvaal Medical Society, Johannesburg.

3. Even when bathing a certain amount of water generally enters the mouth and nose and is swallowed. 4. The disease having occurred in men who had only drunk the water, the view that the parasite enters the body by creeping up the urethra or anus is, I think, hardly admissible and there is no other known example of an entozoon introducing itself except by the mouth. 5. Only a small percentage of the patients with the disease who have come under my observation suffered from veldt sores, disproving the theory advanced that the embryo gains access through such an abrasion.

The parasite having entered the human host makes its way to the portal system, where the worm can be found in the smaller veins; the prostatic plexus and veins of the bladder wall are a favourite site. The time which elapses between its entrance and the onset of symptoms, which we may call the incubation period, seems to be settled from the observations of Dr. Abercrombie, who was in medical charge of the 8th Hussars during the epidemic previously referred to and who kindly provided me with the following notes. During the time that the regiment was at Pretoria several young drafts were sent out direct from England and all in due course bathed in the spruit and as a result several cases occurred in young soldiers whose residence in the country had not been more than two months. The shortest period observed was one month and the longest two months; thus it is concluded that the average incubation period is about six weeks.

On the symptoms of the disease it is not proposed to dwell at length; the hæmaturia probably first calls the patient's attention to his condition, although even then he does not always seek advice, as Dr. Abercrombie knew of many men in the regiment who were performing their mounted duties and had never reported sick, yet were passing large quantities of blood. The complications are due to the mechanical blocking of the vessels or the irritation set up by the ova. The worm living in the vein discharges its eggs which work their way through the tissues into the bladder or rectum, as the case may be. Perhaps the most characteristic lesion is seen in the interior of the bladder, where rounded, projecting masses with a rough and granulated surface are found, the result of inflammatory processes set up by the deposit of eggs in the mucous and submucous tissues. The uterus may also be affected and in one case the patient developed epididymitis which could only be ascribed to a similar cause. The large intestine is a common seat and the bleeding, taken in conjunction with the polypoid growth, may lead to an erroneous diagnosis of piles unless a microscopical examination be made. The ova have been found in the liver and lungs, in which latter they may give rise to hæmoptysis, but are not usually in sufficient numbers to cause symptoms.

An examination of the blood in this disease shows that the number of eosinophiles is enormously increased—20 per cent. or higher. In ten cases in which I made a differential count they ranged from 6 to 20 per cent. This increase in eosinophiles is not peculiar to bilharzia but often occurs in all worm parasitic diseases; in trichinosis it may actually amount to 68 per cent of a leucocytosis of 20 000. What its exact significance or cause is is doubtful; possibly it is due to the action of some toxin or secretion of the worm circulating in the plasma. In my experience the increase is less marked in cases which have persisted for some months. Another interesting point, not usually mentioned, is the presence of fat in the urine—the quantity is best estimated by Shoxolite's process; the largest amount found was 2 per cent, and at first it was thought that this bore a definite relationship to the increase of the eosinophiles but further observation did not bear out this view.

The question of treatment has now to be considered. Up to the present the treatment has been simply symptomatic, as any drugs that will kill the parent worm must necessarily destroy the host. Prolonged inhalation of chloroform or ether, extending over many hours, has been suggested, but to me seems hardly feasible; perhaps the best results have been obtained with methylene blue. Change of climate is often advised, but what is far more important is to prevent the risk of re-infection by only drinking boiled water, or water known to be pure, and the avoidance of bathing in infected streams. It has been suggested by Colonel Birt, R.A.M.C., that the use of a "toxin" in these cases should produce good results and this is borne out by the following facts. Two patients who were suffering from bilharzia contracted enteric fever and on convalescing the urine was found to be free from the ova, and during the time they were under observation (some months) they had no recurrence of symptoms. At the post-mortem examination which was held on a native who died from dysentery and in which the bilharzia parasites were dissected out within two hours of death, the worms were found to be dead; there were well-marked dysenteric lesions of the intestines. The ascaris lumbricoides is almost invariably killed by acute infections. This seems to offer some hope of success in what must be either an incurable disease or one in which time is the only remedy.

The toxin might be conveniently administered by the hypodermic injection of Wright's antityphoid serum. It would not be necessary to give sufficiently large doses to produce a serum reaction, but a series of small doses might be tried which would cause little or no inconvenience. I have at any rate to suggest this treatment for your favourable consideration, as in severe cases the patients will gladly welcome any treatment which offers any hope of success. I have two patients undergoing this treatment, the result of which I hope to publish later. The question arises whether patients returning to England with the disease would be capable of spreading infection, but until Sonsino's observations have been confirmed and it has been shown that the mollusc or other intermediate host, or even the embryo itself, can live in the cold streams at home, it is a question that must remain unsettled, the general opinion being that there is no such risk.

A CASE OF AINHUM.

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AND
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THIS rare local disease occurred in a seaman, aged 44 years. He was a native of Jamaica and had been born in Port Antonio where he had spent his youth until he was 14 years old, at which age he had left home and gone to sea. When he would be about 24 years of age a slight excrescence appeared on the inner side of the flexor aspect of the minimus of the right foot in the flexure of the distal interphalangeal joint. This the patient treated as a corn and pared it down. It slowly grew again and the paring process had to be repeated. The growth was, however, exceedingly slow, so that months elapsed between the use of the knife. On making an examination of the feet, the little toe looked as though a hair or some fine ligature had been drawn tightly round the distal joint and had eaten its way into the flesh. This effect was heightened by the fact that the part beyond the constriction was much hypertrophied, being as large as a hazel-nut and lay doubled up underneath the proximal portion of the toe. The bridge of tissue connecting these parts together was very narrow. There were a slight amount of excoriation and ulceration at the flexure. The toe was freely moveable upon the bridge of tissue but rather painful. The hypertrophied portion felt tense to the touch. The man complained of the pain, which made walking uncomfortable, and asked to have the part beyond the constriction removed. This was done with a sharp pair of scissors and the hard fibrous tissue that composed the band of constriction did not bleed at all in the process. The other toes of both feet were carefully examined but no traces of any constriction were found.

The literature on the subject of this uncommon disease is not large; the only account of any length is to be found in Sir Patrick Manson's "Tropical Diseases." The description given there of the early stages agrees very closely with the foregoing account of this case. It appears to attack only the dark-skinned races and to begin usually with the little toe. It is rare in women and children and most common in adult males. There is nothing noteworthy in the pathology beyond hypertrophy of the adipose tissue which infiltrates the bone in the part beyond the constriction. The theories as to the true nature and cause of this disease are numerous. That it may be a trophic nervous disturbance is supported by the occurrence in some cases of severe loin pains in the earlier stages and by the hereditary tendency noticed by some observers. Leprosy, scleroderma, the wearing of toe-rings

have all been suggested as possible causes. Sir Patrick Manson gives as his own theory the continual wounding of the little toe, the most exposed portion of the foot, by the sharp grasses and jungle through which the sufferers from this disease are accustomed to walk barefooted. In the case reported above there was no history of loin pains, of any other persons of the family having suffered from this disease or from leprosy, or of the patient having at any time worn toe-rings. He had gone barefooted up to the time when he had left home but there was no jungle and very little grass at Port Antonio.

Liverpool.

THE STUDY OF A CASE OF PLAGUE.

BY J. BURTON CLELAND, M.D., CH.M. SYDNEY,
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(From the Pathological Laboratory, Department of Public Health, Perth.)

IN a community almost entirely of European descent and where the incidence of plague is slight those cases that do occur offer exceptional facilities for studying its etiology, spread, and symptoms. In one of the recent cases in Perth, Western Australia, the date of onset of the symptoms seemed to suggest that these were coincident with the death of a proportion of the bacilli and the consequent liberation of an endocellular toxin. As this, if true, may throw some light on the lengthy incubation periods of various infectious diseases the circumstances seem worthy of record.

The patient, a young man, worked as a painter in the "infected area" (that is, the area in which infected rats were known to be present) in Perth but resided in a healthy suburb. About ten days before becoming ill he had noticed the smell of dead rats in the workshop, but the infection probably dated from some days later. He had some diarrhœa from May 9th to 12th but only became ill on the morning of the 13th, when he had "shivers" and his temperature rose to 104° F. Next day he had severe pain in the left groin and the case was reported as plague to the Central Board of Health in the evening of that day; his temperature was then 102·6° and the pulse was 90. On examination on the morning of the 15th the temperature was 101·4° and the pulse was 102 and soft. The eyes had a salmon coloured suffusion (very characteristic of cases of plague in Australia), the tongue being thickly coated and dry. He was very restless and complained of a frequent desire to pass urine and stools, as well as of pain in the left lower part of the abdomen and both groins. There were diffuse firmness and tenderness over the left iliac region and in the left groin; these were less marked in the right groin. No glands were definitely palpable. There were no sores on the legs. The matron at the Plague Hospital said the patient had the "plague smell."

A hypodermic needle was inserted into the left groin and one drop of a sero-sanguinolent fluid was withdrawn. This contained enormous numbers of plague bacilli, some of which were bipolar but many had a degenerated appearance. In blood films made at the same time the plague bacilli, typically bipolar, were two or three times as numerous as the leucocytes, say, roughly, 15,000 per cubic millimetre. Pure cultures were obtained from these two sources. The patient became rapidly worse and died suddenly in a "kind of convulsion" about 6 P.M.

Necropsy.—At the post-mortem examination (15 hours after death) there were found on the chest from 15 to 20 small red papules with yellow centres, usually connected with hairs; there were scattered similar ones on the thighs. There was a purplish area of about the size of half-a-crown where the needle had been inserted in the groin. On opening the abdomen a little yellowish bloody fluid escaped. The whole of the retro-peritoneal tissues from the lower part of the liver into the pelvis were the seat of a hæmorrhagic exudation and quite black. This condition extended on to the anterior abdominal wall nearly as far as the umbilicus and into the iliac regions, ending as streaks and splashes of hæmorrhage. The various imbedded glands were enlarged but not markedly so. This hæmorrhagic condition extended behind Poupart's ligament into both groins, where it was very extensive; in the left groin there was in addition a solid gelatinous-looking œdema. The liver was large, pale, and glistening with a few petechiæ; the spleen was large and rather firm; the kidneys were engorged, large, with numerous large petechiæ on the surface; the suprarenals were healthy. The intestines seemed normal save for various splashes of blood under the serous coat of the descending colon, sigmoid flexure, and rectum. The bladder showed similar subserous hæmorrhages. The mesenteric glands were neither enlarged nor hæmorrhagic. There were scattered petechial hæmorrhages in the mesentery. The lungs were normal, with a very few petechiæ. There were a few subpericardial petechiæ; the blood in the heart was partly fluid, partly tarry. A film from the spleen showed great numbers of typical bipolar bacilli. In a film from the bloody exudate of the thigh several plague bacilli were seen in each field, but they were small, diplococcal-looking, and often in chains of several elements.

Relation of onset of symptoms to death of bacilli.—As has been already stated, the film made from fluid taken from the bubo during life contained inconceivable numbers of plague bacilli but comparatively few of these were typically bipolar, the great majority appearing as granular, irregular, and broken-up fragments. In marked contradistinction to this appearance were the pictures presented by blood films taken at the same time and films from the spleen obtained post mortem, in both of which the plague bacilli were beautifully bipolar. As the patient had only been ill for 48 hours before the taking of the film from the groin it seemed barely possible that the plague bacilli had multiplied there to such an extent (the film was nearly "black" with them) and then had died to such an extent, all within that brief period. The interpretation, in fact, which naturally suggested itself for this case and plague in general was this—that living plague bacilli probably liberate no toxic bodies or very few; dead bacilli, as we know, from the reaction to protective inoculation, set free powerful ones. If living plague bacilli gain entrance through the skin of the lower limb they would reach, by means of the lymphatics, the glands in the groin, they would here multiply and, in certain instances, escape onwards, finally, in septicæmic cases, reaching the blood. Being still alive there would, so far, be no reaction in the tissues and the patient would still be in the incubation period of the disease. Eventually, however, the bacilli, as the result of anti-microbic bodies or the exhaustion of food supply or for other reasons, die and, as would be expected, die first where they have had longest residence. As they die their endocellular toxins are liberated and local and systemic reaction follow in proportion to the dose. As it is only in rare instances that the bacilli remain and multiply at the point of inoculation or in the lymphatic vessels leading to the nearest glands lymphangitis seldom appears. It is otherwise in the lymph glands themselves in which multiplication has been marked and with their death we find the rapid formation of a bubo indicative of the local reaction to the liberated toxin and the first systemic symptoms of the disease due to its generalised effect. As antitoxins are now rapidly formed in response to the presence of these toxic bodies, the increasing doses of poison set free by the death of the bacilli in other parts are combated to a greater or less extent by them. Hence further buboes are rare, though they may occur, even up to a late date, given the rapid death of many bacilli in any particular local area and a low content of antitoxin at that spot.

Perhaps the best way to test the view here propounded is to see how its acceptance agrees with facts and explains away difficulties. Thus:—

1. If plague is, as a rule, due to inoculation through the skin, *why is there so seldom any local reaction and as rarely a lymphangitis*, these being such marked features of a wound infection by, say, streptococci? Because living plague bacilli exert only a mechanical effect and not a toxic one on the tissues, and as they only rarely remain and multiply at the seat of inoculation (such as an insect bite) or in the lymphatic vessels, no reaction follows. Hunter,[1] in THE LANCET, describes a case in which the inoculated area was comparatively large (a scratch); in which in consequence the bacilli remained and multiplied, as they did in the lymphatics also, and in which, but not until the third day, signs of reaction appeared. But if the signs of inflammation were not due to the death of the bacilli but to the presence of the living ones why was the inflammation

[1] THE LANCET, July 14th, 1906, p. 83.

postponed till the third day, when we know that a streptococcal wound infection may show the first signs of reaction in as early a time as six hours? Further, the minuteness and the nature of the wound caused by a suctorial insect (such as a flea) probably both aid in enabling the bacilli to pass on without multiplying locally.

2. *Why is one set of glands, and most usually those of the groin, alone affected?*—Because these are the glands draining the area of inoculation; in them the bacilli are first arrested and multiply greatly before passing on to other groups or the blood stream. In them they die first and in greatest numbers and in consequence set up an intense local reaction—the bubo.

3. *Why are buboes sometimes absent?*—Because the bacilli have entered the body by other routes than skin inoculation; or, if the latter has occurred, they have escaped the nearest glands by entering more directly into the blood stream or have multiplied in the glands to a less extent than usual.

4. *Why do buboes sometimes appear as late as the second week of the disease?*—This has been already explained.

5. *Why do no symptoms appear during the incubation period* of this disease (and probably some other diseases), though we know that during this period the bacteria are multiplying rapidly and must be present in great numbers? Because the living bacilli are not toxic and it takes some days before anti-microbic bodies or other forces can destroy a sufficient number of the bacilli and so set free large doses of toxin.

It will be seen that this view, if adopted, lends strong support to the skin inoculation theory of plague, so ably set forth and supported by Dr. J. Ashburton Thompson of Sydney in his "Plague Reports," and which our experience here gives us strong grounds for supposing to be correct. To conclude, the theory I have set forth may be summed up in an apparent paradox: The onset of signs and symptoms in plague is the first indication of commencing recovery from the disease!

Perth, Western Australia.

THE SUPRAPUBIC DRESSING.

BY G. H. COLT, M.A., M.B. CANTAB., M.R.C.S. ENG.

IN THE LANCET of Nov. 4th, 1905 (p. 1322), there is an account of some experiments which led up to a device described as a new dressing for cases of suprapubic cystotomy. The selection of the size of the apparatus was necessarily a matter which needed more extended observation and as a result of this it has been found necessary to add to the set of apparatus the two pieces described below. The oval glass has been produced by Messrs. Down Bros., Limited, only after very considerable trouble and expense. Whereas the cylindrical pattern can be readily made by a glass blower from glass tubing the oval pattern has to be manufactured by means of a mould. It is unnecessary to enter into a description of the various experimental patterns which were made to determine the size and shape of the oval. The final steel mould was made as a sequence to these experiments and the oval glass as now turned out from it is very satisfactory. The accompanying illustration shows the pattern to half scale but it is difficult to show in a drawing the many small points material to the actual apparatus.

The chief points are the following. 1. The sides bulge out in a regular manner all along the circumference of the oval, so that the rubber fits the glass evenly and closely and there is no leakage of urine or lotion between the two. 2. A groove is provided so that the rubber can be tied on to the glass. This is unnecessary in the case of the cylindrical vessel, but in the oval pattern leakage is liable to occur unless the rubber is fastened in some way. 3. All the edges are rounded off and the base is also machined up flat so as to avoid the risk of ulceration from unequal pressure. The oval pattern is large enough to cover the very largest wound that is likely to be made and it can be applied so soon as the urine is free from blood clot, that is to say, on the second or third day after the operation. The method of its application is precisely as described in the former paper, and is now well known. The chief essential detail is to shave the skin very close. It is often noticed that the edge of the rubber disc curls up in places after it has been applied. As a rule it uncurls again of its own accord and becomes fixed to the skin. This curling up does not occur when the solution is used in small quantity and is well rubbed in, but it sometimes happens that this is impossible.

The second addition to the set of the apparatus is the provision of two separate oval pieces of sheet rubber, each measuring six inches by four inches, and having punched out in the long axis of the oval, but half an inch eccentrically, a hole of the size required for the large or the small cylindrical glass. A pendulous abdomen interferes with the application of the oval glass by reason of its size and it is far more satisfactory in these cases not to increase but to diminish the size of the *rigid* part of the dressing and to

Suprapubic dressing, oval pattern.

increase at the same time and to the same extent the *flexible* part—namely, the rubber. This at once solves the problem and as the rubber adapts itself excellently to all folds and wrinkles the small glass remains suspended over the wound and is efficient. A very large wound can be dressed in this way, and since the troubles of nursing these patients by the old method varied directly with the weight of the patient and the size of the abdominal wall, the latter when large being frequently coincident with a pendulous abdomen and a gaping wound, the utility of this simple addition is evident.

In case it should be desirable for the patient to get up while he is wearing the oval glass this is also made up as a separate piece with the dome solid except for a pin-hole opening remote from the exit-tube. The risk of urine overflowing as the patient moves about is thus minimised. These cases are not common as a matter of experience, though one would expect them to be so since prostatectomy is common and the patients are generally over 50 years of age and liable to bronchitis. It is unnecessary, therefore, to enter on this part of the subject at greater length here. If the small cylindrical glass is used for this purpose the variety with a side tube in place of the hole at the top is employed so that the margin of safety from overflow may remain the same. The selection of the piece best suited to the case is a matter which anyone who understands the principles involved can make for himself without much difficulty.

There is no doubt that the dressing can be both used and abused. For instance, it is not uncommon to see the wound inside the glass remaining uncared for. Several such wounds have closed while the glass has been in place but it is probable that they would have closed sooner if they had been attended to regularly, say once a day, by means of a pair of sinus forceps or with a probe passed through the upper opening of the dressing. The caustic probe is particularly useful

in this respect and is much more handy and efficient than a stick of caustic. Moreover, the ease with which the caustic can be renewed by redipping the probe in fused silver nitrate which is on the point of solidifying results in a great saving of caustic. Apart from this lack of attention to the wounds their condition is precisely what it was when they were dressed with gauze and on drying and inspecting them no difference between the two can be discovered. Then, again, the discs of rubber with the holes properly punched out and of exactly the right size are more efficient than any that can be cut out by hand alone and no other quality or thickness of rubber has been found which is more efficient than that supplied. It is not uncommon to see makeshifts employed, perhaps to the discredit of the device and for lack of renewal of stock. Further trials of a few varieties of plaster show that none approaches in respect of efficiency the present method of utilising a solution of rubber in naphtha, indeed, no plaster yet tried has remained in place for more than six hours without becoming soaked through. When the rubber solution becomes too thick by evaporation the addition of a small quantity of naphtha or benzine well stirred in it will improve it.

It is common now to perform any washing out that may be necessary by means of a catheter introduced either through the penis or through the top of the glass, the excess lotion being allowed to flow off through the exit tube. Patients take their bath after the rubber tube has been detached without having the rest of the dressing removed. It is also found that continuous irrigation of the bladder is easy to arrange. There are, however, no results from this method of treatment to record at present, but *a priori* one would expect a good deal of benefit from it in certain cases, especially in those in which pho-phates are deposited in the bladder. Increased experience shows that five days and not four is the average *minimum* period for the dressing to remain efficient without needing attention. At the end of this time it is good practice to omit it for 12 or 24 hours, so that the skin and the wound may be well cleaned up before the dressing is reapplied, but this is by no means essential. Phosphates may be removed from the glass at the same time by soaking it in dilute hydrochloric acid. No cases of ulceration of the skin have been reported so far and in the only two cases in which the dressing failed ulceration sufficient to prevent the efficient application of the rubber solution was already present. In these two cases the device was a complete failure.

It would perhaps be as well to mention here that the common causes of overflow through the hole in the top of the glass are (1) the exit tube being at some part of its course above the level of this hole; (2) the exit tube being too long and the distal end being in consequence coiled up in the receptacle beneath the bed; (3) the exit tube being interrupted by a joint (this is unnecessary); and (4) syphonage occurring through the wool or gauze which is used to cover the top of the dressing having sagged down into the glass. No harm results from omitting this covering entirely. The dressing, unless working efficiently, is a trouble rather than a benefit to the patient, because the uncertainty renders it necessary to examine him frequently to see if he is wet and to dress his wound in both ways at once to insure his being kept dry. This means double the work. Sometimes a patient picks off the rubber in his sleep, but this is not a common cause of leakage. To cause the dressing to work efficiently certainly does demand a small amount of attention. The cause of the inefficiency is not far to seek, as a rule, and when found and removed efficiency is insured and the patient remains dry with much less inconvenience and without any harm resulting so far as can be seen. The longest time so far during which the patient has remained dry from a single application of the dressing is a fortnight. When one considers that during that period by the old method the patient would have needed dressing about 100 times with a change of the draw-sheet each time, and very often with a change of his shirt as well, the practical utility of the device as a mere labour-saving machine and quite apart from the patient's comfort is obvious. The saving in cost of dressings during the fortnight would be between £2 and £3 and the saving of time to the nurse about 24 hours. The numbers of the separate pieces composing the complete set of apparatus have been revised in accordance with the demand. The various items can also be obtained separately.

In conclusion, I wish to thank all those who have reported their cases to me or who have allowed me to watch the progress of them. Such a system lends itself admirably to improvement in surgical technique, but at present the failures recorded are all too few and probably several points still remain to be elucidated as they arise.

St. Bartholomew's Hospital, E.C.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

WESTMINSTER HOSPITAL.

A CASE OF PUERPERAL ECLAMPSIA IN WHICH THERE WAS CESSATION OF THE URÆMIC SYMPTOMS AFTER REMOVAL OF CEREBRO SPINAL FLUID.

(Under the care of Dr. RICHARD G. HEBB.)

FOR the notes of the case we are indebted to Mr. J. A. Braxton Hicks.

The patient, who was 29 years of age, was admitted on May 26th, 1906, to the Westminster Hospital. The history of the illness was to the effect that since May 16th she had been suffering from the following symptoms: œdema of the feet, legs and face; severe and persistent frontal headache; passage of scanty high coloured urine; drowsiness; and just previously to admission "fits." She further stated that she was six months pregnant and that she had had five previous pregnancies, the last ending in a miscarriage at the third month. All the labours had been instrumental but there had been no other untoward symptoms. The family history was good and there was no previous history of fits. When first seen by the house physician, Mr. J. G Gibb, at 4.45 P.M. her condition was as follows. She was very drowsy and complained of headache; there was moderate œdema of the face and legs; the temperature was 98·4° F; the pulse was of high tension; the second cardiac sound was accentuated and the first sound was reduplicated, but no bruit or enlargement of the heart could be detected. On examination of the abdomen the fundus of the uterus was found to reach to the level of the umbilicus and the uterus contracted under the palpating hand. The uterine souffle and fœtal heart were both heard. Bimanually the cervix was found to be soft; the os admitted a finger and fœtal parts and movements were felt. The urine was high-coloured and became semi-solid on boiling. It contained much serum albumin, a little globulin, hyaline and granular casts, red corpuscles, leucocytes, epithelium, and pigment granules. At 6 P.M. she had an epileptiform convulsion, attended with much cyanosis and preceded by a cry. The right side of the body was most affected. Chloroform was administered. At 8.45 P.M. she had another convulsion. Chloroform was again given and three laminaria tents were inserted into the cervical canal. After this there was frequent vomiting and morphine was prescribed. Next day (the 27th) at 7 P.M. the patient aborted. The placenta and membranes were detached by the finger. There was very little uterine hæmorrhage after delivery. During the night the temperature rose to 99·2° but by the next morning it was 98·4° and afterwards remained normal. On the 28th she had three more convulsions, two of which were fairly severe. Dr. Hebb then decided to try lumbar puncture as had been recommended by some for uræmic convulsions. Lumbar puncture was accordingly performed and at first the cerebro spinal fluid flowed into the test tube in a continuous stream instead of drop by drop as is normally the case. The fluid withdrawn measured 38 cubic centimetres; it was found to contain no urea but it reduced Fehling's solution, giving also glucosazone crystals. From the time lumbar puncture was performed till the patient left the hospital her condition rapidly improved. The drowsiness soon disappeared and the pulse tension diminished but the first cardiac sound remained reduplicated and the second sound accentuated. By the 31st the headache had entirely disappeared. On June 1st the top of the uterus could not be felt through the abdominal wall. On this day also the

breasts began to secrete; the secretion, however, was scanty and needed no treatment save an absorbent pad and bandage. The lochia were never at any time offensive or excessive and they ceased on June 8th, as did also the mammary secretions. The total amount of urine passed and the percentage of urea soon reached normal. Each day the amount of albumin grew smaller and the casts diminished in number, so that by the time the patient was discharged, on the 13th, there was only the faintest cloud on boiling and the centrifuged deposit showed only a few hyaline casts.

Remarks by Dr. HEBB.—The case, which was perforce admitted to a medical ward owing to the paucity of beds on the obstetrical side, was first seen by Dr. Bertram L. Abrahams on May 26th and after consultation with Dr. George D. Robinson it was determined to empty the uterus. Though this was successfully accomplished the uræmic symptoms persisted but soon subsided after the withdrawal of the cerebro-spinal fluid, a result in accordance with cases recorded by others. This is the first opportunity which I have had of testing the value of this procedure and judging from the result the treatment certainly deserves further trial. There is no need to descant on the theories of uræmia in connexion with this case but it seems to me that should the withdrawal of cerebro-spinal fluid be frequently found to be followed by cessation or amelioration of uræmic symptoms the chemical view which now holds the field will have to be modified. The cerebro-spinal fluid was tested for urea but none was detected; a rough estimate was also made of the globulin in the urine with the result that it was found to be minute as against the amount of serum albumin. As already noted, the cerebro-spinal fluid reduced Fehling's solution and formed glucosazone crystals when treated with phenylhydrazin and sodium acetate. It was quite pellucid when withdrawn and the centrifuged deposit showed only three or four lymphocytes to the field of a one-sixth inch objective. I am much indebted to Mr. Gibb for his skilful and successful management of the case.

ST. LEONARD'S HOSPITAL, SUDBURY, SUFFOLK.

A CASE OF "REST GROWTH" IN A FLOATING KIDNEY; NEPHRECTOMY; RECOVERY.

(Under the care of Dr. EDGAR HUNTLEY.)

ON March 16th, 1906, Dr. Huntley was sent for by a stranger to go to see his wife who, instead of passing urine, had passed blood. On his arrival he found the patient to be a stout, florid woman, 66 years of age, who had been constantly employed for the last 34 years at laundry work in all its branches. She gave the following history. Both parents lived until over 80 years of age; a brother and a sister died from pulmonary tuberculosis and one sister from "dropsy." She herself never remembered being ill enough to call in a medical man until 16 months after her marriage when she gave birth to a stillborn child of seven months. She had never been pregnant since. Her periods had been perfectly regular and never copious. The menopause took place about the age of 48 years. For the last 30 years she had had pains in her back, which were worse on stooping and were always relieved by the application of bran poultices. She never noticed any difficulty in passing urine nor had there been any marked increase in frequency of micturition nor to her knowledge had she ever before passed blood.

On examination nothing could be discovered amiss in the chest but in the abdomen there was a large moveable mass mainly lying to the right side of, and below, the umbilicus. The patient was quite unaware of its presence. There was no tenderness about it and it felt very like a hard fibroid of the uterus. Being a little uncertain as to where this blood came from the vagina was first examined but no sign of blood was there. A catheter was then passed and no sign of blood or of urine was found, the bladder being empty. Nothing unusual was found in the rectum. Considering the quantity of blood in the utensil and the presence of the above-mentioned mass Dr. Huntley advised the patient's removal to hospital with the view of watching her. She was admitted on March 19th and kept in bed. No blood had been passed from the day she was first seen up to March 24th, when more blood was passed and this time there was no doubt that it came per urethram. Up to this time albumin and casts were absent from the specimen of urine passed and the quantity of urine averaged between two and three pints per diem.

Operation.—The patient having been carefully prepared she was given A.C.E. mixture by Mr. B. N. Molineux. Before opening the abdomen the mass could be moved about in any direction and did not have any tendency to return to the spot which it originally occupied. There was no evidence of ascites. The abdomen being opened and the mass brought up to the surface a very dark blood-stained and bruised-looking mass was evident with coils of intestine adherent all over the front of it. After great difficulty, owing to adhesions, the mass was found to have a large, thick pedicle lying at its posterior aspect. At this stage it was a question whether in existing circumstances it was right to proceed further. However, as no glands could be felt and the liver being free from any deposits, the coils of intestine were gradually and carefully peeled off the mass and the vessels ligatured *en route*. This took a very long time. The pedicle was tied and the lump was removed. It was only then that it became certain that the tumour was a kidney with a very large growth springing from it. There being now very little hæmorrhage the abdomen was closed, all clots being sponged out, and the left kidney was noted in place and feeling normal in size and consistence.

The patient made a most uneventful recovery and left the hospital for a convalescent home on April 24th. On her return three weeks after she was extremely well and had put on nearly ten pounds in weight.

Remarks by Dr. HUNTLEY.—As we were quite uncertain as to the nature of the growth springing from the kidney, and as I personally had not seen anything like it before, it was decided to send the whole mass for examination to the Clinical Research Association. In due course the report received was to the effect that the mass was a true adrenal rest carcinoma. Being somewhat rare, and Guy's Hospital Museum only containing one or two such specimens, the mass was halved, one portion being placed there and the other being kept here. So far as I can ascertain there is no mention of a like growth occurring with a floating kidney, but the mobility was in some respects a help at the operation, in so far as making it easier for removal. Should the mass have been fixed in the ordinary position it would have been most difficult to remove through a lumbar incision owing to the large size and many adhesions and the tearing of important structures almost inevitable. As it was I had plenty of room.

My task was much facilitated by Mr. Molineux's help as anæsthetist and by that of the nursing staff who acted as my dressers.

Reviews and Notices of Books.

A Text-book of the Practice of Medicine. By JAMES M. ANDERS, M.D., Ph.D., LL.D., Professor of Medicine and Clinical Medicine at the Medico-Chirurgical College; Physician to the Medico-Chirurgical Hospital, Philadelphia. Illustrated. Seventh edition, thoroughly revised. London and Philadelphia: W. B. Saunders Co. 1905. Pp. 1279.

THIS text-book is probably better known in the United States of America than in this country but the fact that a seventh edition has been called for is sufficient proof that the efforts of the author have met with well-merited success. The work is intended to introduce the student to the present state of knowledge of medicine in general; especial emphasis, however, is laid on points affecting diagnosis and treatment. The differential diagnosis in many instances has been tabulated. There are 56 such tables scattered through the work and they will be found useful for rapid reference. The majority of the tables are full and accurate but occasionally omissions occur. In considering the diagnosis of disseminated sclerosis, for instance, paralysis agitans, locomotor ataxia, and hereditary ataxia are tabulated as presenting certain similarities to disseminated sclerosis, and the differential points are carefully stated. Syphilis of the central nervous system is also mentioned as being liable to give rise to diagnostic errors. On the other hand, the condition most likely to be mistaken for disseminated sclerosis—namely, functional

disorder of the central nervous system—is not mentioned, nor is general paralysis of the insane.

For this edition the whole work has been thoroughly revised so as to include the more recent advances that have been made in medical knowledge. Certain new subjects have been introduced, such as myasthenia gravis and Rocky Mountain spotted fever, a disease which has been known for many years in the valley of the Bitter Root River in Western Montana and which has also appeared in Rock Creek and Bonito and in the valleys of streams situated in the mountainous sections of North-Western Nevada, Southern and Western Idaho, and in Northern Wyoming. Paragraphs have also been added on pseudo-tuberculosis, benign cirrhosis of the stomach, intestinal calculi, and the Adams Stokes syndrome. Important additions have been made to the account of diseases which prevail principally in tropical and sub-tropical regions.

The book is well printed and there is a full index. We have no doubt that the present edition will meet with the popularity which has attended its predecessors.

The Operating Room and the Patient. By RUSSELL S. FOWLER, M.D., Surgeon to the German Hospital, Brooklyn, New York. Fully illustrated. London and Philadelphia: W. B. Saunders Company. 1906. Pp. 172. Price 10*s.* net.

THE author describes the conditions and arrangement at the hospital with which he is connected, and he appears to think that any different arrangements must be faulty. To our mind a rather large number of assistants appear to be thought necessary for an operation. Thus there are four operating-room nurses, which in addition to the anæsthetist and the anæsthetist's special nurse and an operating-room orderly make up quite a crowd. The operating staff consists of the operator, his adjunct, the house surgeon, and the senior assistant. Thus there are apparently 11 persons required for an operation. The author seems to be very fond of having furniture and basins and tables wiped with a solution of perchloride of mercury. Has he any proof that this wiping with an antiseptic has any advantage over simple cleansing? For anything that can be boiled boiling is far preferable to all other means of sterilisation. The lists of instruments for various operations are likely to prove useful. We are told that anesthal is "a chemic combination of ether, chloroform, and ethyl chloride"; we should be glad to know the evidence that it is anything more than a mixture. It sounds rather curious to be told that the required amount of ethyl bromide should be "poured into a small graduate."

The Microscopy of Vegetable Foods, with Special Reference to the Detection of Adulteration and the Diagnosis of Mixtures. By ANDREW L. WINTON, Ph.D., with the collaboration of Dr. JOSEF MOELLER. With 589 illustrations. London: Chapman and Hall, Limited; New York: John Wiley and Sons. 1906. Pp. 701. Price 31*s.* 6*d.*

THE identification of food products of vegetable origin by the microscopic structure and micro-chemical reactions of their tissues and cell contents is a branch of analysis which is somewhat neglected in this country although the application of the microscope to the diagnosis of foods and drugs so often proves a valuable aid to the detection of adulteration. Readers of THE LANCET will recall the revealings of the microscope in regard to the adulteration of food by THE LANCET Sanitary Analytical Commission in 1850 instituted by the founder of this journal. At that time, indeed, the microscope did more to lay bare the extensive adulteration that was being practised than did the test-tube. For all that, the modern analytical curriculum does not appear to attach that importance to microscopical methods of differentiation which we should have thought their value demanded. There are signs, however, of an awakening in this direction and English scientific literature, formerly so short of practical works on the subject, is, we are glad to find, being enriched with works on vegetable histology both in its pure and applied aspects. To the works of Hassall and Greenish, amongst others on the subject, we must now add the book before us which we estimate at once as so far the best, as it is the most comprehensive, contribution in the English language to the literature of the histology of vegetable foods.

As is acknowledged in the preface, the work is closely affiliated with the second edition of Moeller's "Mikroskopie der Nahrungs- und Genussmittel," which was published about a year ago with the collaboration of Dr. Winton who is in charge of the analytical laboratory of the Connecticut Agricultural Experiment Station. Thus, the description of the individual leaves, flowers, barks, roots, and edible fungi, with few exceptions, are translations of Professor Moeller's text and no less than 350 illustrations are due to the same source. The work is divided into ten parts, the first dealing with reagents, apparatus, the preparation of materials for examination, the histological elements (tissue and cell-contents), and the morphology of organs. The real business of the book is commenced in the second part, entitled "Grain: its Products and Impurities." Then follow chapters on oil seeds and cakes, legumes, nuts, fruit and fruit products, vegetables, alkaloidal products and their substitutes, spices and condiments, and commercial starches. A very valuable feature of these chapters is the profuseness and excellence of the histological and morphological illustrations which will be of the greatest assistance in the quest for foreign additions or adulterants. Apart from the food analyst, the agricultural chemist, or the pharmacist, the medical man will appreciate those chapters which throw light upon the methods of identifying vegetable substances in, for example, the contents of the stomach or in the dejecta. Throughout the directions are thoroughly practical. We think we have indicated enough to justify our cordial commendation of this latest and valuable addition to analytical literature.

Secrets of Lawn Tennis. By F. W. PAYN. London: L. Upcott Gill. 1906. Pp. 176. Price 2*s.* 6*d.*

IN this little work on lawn tennis Mr. F. W. Payn, a well-known exponent of this popular pastime, descants at considerable length, and with much acrimony, on the subject of diet, and at less length and with less acrimony, but probably with more knowledge, on the manner in which the game of lawn tennis should be played. It is unlikely that many authorities will disagree with the advice which the author offers on such questions as "passing strokes," "the stop volley," "the shoulder stroke," and the "follow through," questions which constitute for the most part the secrets which are divulged by Mr. Payn, but, nevertheless, when he enters into scientific explanations even on these very matters, in which he doubtless has great practical experience, we at once find ourselves in very serious disagreement with him. For instance, when he speaks of the "shoulder stroke" he compares the movements of the arm and racquet to the action of a lever of the third class, in which the fulcrum is at the shoulder-joint, the weight at the point of impact with the ball, and the power at some point apparently on a line which is formed by producing the axis of the arm through the body towards the opposite shoulder. Mr. Payn should study the anatomy and mechanics of the shoulder girdle before he identifies himself with ridiculous statements of this kind. We find the same fault

with those parts, and they form the major portion, of the book which refer to the subject of diet. The general views in their practical relationships are, in our opinion, quite sound, but the theoretical and the scientific parts are little less than twaddle. On the subject of fatigue and "fitness" Mr. Payn writes at considerable length, but he devotes himself too exclusively to the muscular side of the question; the nervous side is relegated to a very subordinate position. "Fitness" cannot be secured by feeding muscles even on an ideal dietary; there is a very decided limit as to what food can do. Provided that the other factors in the environment are of the best possible character, there can be no doubt that neuro-muscular efficiency can be raised to a very high standard of efficiency on a vast number of food combinations which may or may not coincide with the views of different food specialists or food faddists. But neuro-muscular efficiency is, and must be, impaired by every variety of intoxication, whether of endogenous or exogenous origin, and to this condition gross errors of diet, indigestion, and over-stimulation of all kinds must clearly contribute; but to imagine that fitness can be secured and fatigue prevented by adhering to any one particular line of dietary is manifestly absurd.

Mr. Payn is very hard on some of the best known writers on dietetics who disagree with him on the question of proteid metabolism. He appears to think that if man cannot live without meat at least he is all the better for a very restricted proteid intake; indeed, he even goes so far as to quote authorities in support of the statement that oleaginous principles of food can be built up in the animal economy and gradually converted into nitrogenised principles by combining with atmospheric nitrogen, and he thinks that this sort of process has taken place in his own body after a hard game of lawn tennis when six or seven pounds loss in weight has been made good by a nitrogen-free diet such as he enjoins. It does not appear to occur to this authority on dietetics that a large part of the loss in weight may have been due to a loss in water and of reserve stores of fat and glycogen and that the dissipation of fatigue, from which he so rapidly recovers under this *régime*, may be due to the physiological influence of rest.

Although, perhaps, we have been almost as severe in our criticism of the author as the author has himself been on several eminent medical authorities, nevertheless we must admit that the "Secrets of Lawn Tennis" is a very readable little book and that the practical hints on play will probably be most useful to those concerned.

LIBRARY TABLE.

Course of Instruction in Operative Surgery in the University of Manchester. By WILLIAM THORBURN, B.S. Lond., F.R.C.S. Eng., Lecturer in Operative Surgery. Manchester: At the University Press. 1906. Pp. 75. Price 2*s.* 6*d.* net.—This is a volume of the medical series of the publications of the University of Manchester and as it gives the regulations in use in the operative surgery class there it is obvious that it is primarily intended for local use, but it can be used with any operative surgery class. The book is based on notes which the author has been in the habit of providing for his class for each day's work. They tend, he finds, to the smooth and rapid working of the class and therefore he has published them. He tells us that these notes are only intended to draw the students' attention to the main points of the operation to be performed and are not intended to replace any of the ordinary text-books on operative surgery. This explanation by the author disarms criticism and for the purpose intended the book should prove useful. Space is provided for notes by the student but we doubt very much if the average student will use these blank sheets.

Portfolio of Dermochromes. By Professor JACOBI of Freiburg in Breisgau. English adaptation of text by J. J. PRINGLE, M.B. Edin., F.R.C.P. Lond., Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. Supplement containing 76 additional coloured illustrations. London: Rebman, Limited; New York: Rebman Company. 1906. Forty plates; pp. 72. Price, loose plates, 25*s.* net; half roan binding, £1 8*s.* 6*d.* net; full roan binding, £1 11*s.* 6*d.*—The previous volumes of this work were excellent examples of colour printing and this supplement is no whit behind them in quality of production. The plates are taken from wax models and they represent very accurately the morbid conditions. The four-colour process employed is a very definite advance on most three-colour methods and it is difficult to see how the results can be surpassed. The English adaptation of the text by Dr. Pringle is admirably done.

National Conference on Infantile Mortality. Report of the Proceedings of the National Conference on Infantile Mortality, held in the Caxton Hall, Westminster, on June 13th and 14th, 1906. Westminster: P. S. King and Son. 1906. Pp. 314. Price 1*s.* 6*d.* net.—The report of this national conference, over which the Right Hon. John Burns presided and of which Mr. Evan Spicer, the chairman of the London County Council, was the chairman, contains much of real interest to the community. The idea of the conference originated among the British delegates to Paris in October, 1905, who attended the International Congress on the Functions of Infants' Milk Depôts. So deeply impressed were the British visitors with the vigour with which France is attacking the question of infantile mortality and so great seemed to them the contrast which this presented with the apathy towards the question existing in this country that a requisition was prepared and addressed to the representatives of certain corporations suggesting that they should take steps to convene a national conference on the subject. The conference of which this volume is a record is the outcome of that requisition. A public recognition of the excessive infantile mortality has now been obtained and of the fact that although some of its causes need little more than recognition in order to be removed, in essence it arises from causes which lie deep in the social and economic conditions of the people. The book contains a list of the office-bearers and members, the President's inaugural address, and the following papers: 1. The Teaching in Schools of Elementary Hygiene in Reference to the Rearing of Infants, by Dr. James Niven. 2. The Appointment of Qualified Women, with Special Reference to the Hygiene and Feeding of Infants, by Dr. J. Spottiswoode Cameron. 3. The Public Supply of Pure or Specially Prepared Milk for the Feeding of Infants, by Dr. G. F. McCleary. 4. Premature Birth in Relation to Infantile Mortality, by Dr. J. R. Kaye. 5. Alcoholism in Relation to Infantile Mortality, by Professor G. Sims Woodhead. 6. Ante-natal Causes of Infantile Mortality, including Parental Alcoholism, by Dr. J. W. Ballantyne. 7. The Teaching of the Hygiene of the Expectant and Suckling Mother, by Dr. John F. J. Sykes. 8. Earlier Notification or Registration of Births, by Alderman B. Broadbent, Mayor of Huddersfield. 9. Memorandum on the Earlier Registration or Notification of Births, by Dr. E. W. Hope. 10. Infant Life Insurance, by Councillor W. F. Anderson. 11. Infantile Mortality and Life Insurance, by Mr. F. Schooling. 12. Infant Mortality and the Employment of Married Women in Factory Labour Before and After Confinement, by Dr. G. Reid. 13. The Regulation of the Placing of Infants out to Nurse, by Dr. S. G. H. Moore. 14. The Amendment of the Infant Life Protection Act, by Dr. A. Greenwood. 15. The Chemistry of Infant

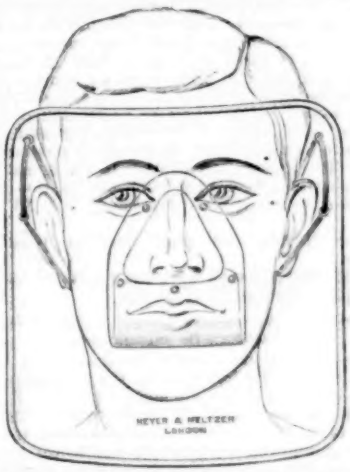
Foods, by Mr. J. Knight, D.Sc. 16. Increase of the Powers of Local Authorities with Regard to Milk-supply, by Dr. A. K. Chalmers. 17. The Operation of the Midwives Act in England, with a view to its Extension to Scotland and Ireland, in Relation to Infantile Mortality, by Dr. Margaret M. Smith. The papers were followed in turn by a series of resolutions.

Questions and Answers on Nursing for the St. John Ambulance Associations, and Others. By JOHN W. MARTIN, M.D. R.U.I. Fifth edition. London: Baillière, Tindall, and Cox. 1906. Pp. 138. Price 1*s.* 6*d.* net.—In this, the fifth, edition of this little book a change has been made in the type in which the questions and answers have been printed; by the change the author hopes the reader will be helped in fixing both more easily in his memory. The book has been revised and some additions have been made. The author has adhered closely to what is required by the St. John Ambulance Association in the examinations conducted under its auspices. Many of those who are studying nursing will find the book helpful in fixing points of importance and interest upon their memories. It is a useful work. On p. 78, in the answer to the third question, we suppose the word "teacup" is wrongly printed for "teapot."

New Inventions.

FACIAL PROTECTIVE MASK.

THE frequent liability which those engaged in throat work incur of having the face spat upon and bespattered with visible and invisible expectoration and the toleration with which this has been endured by the faculty would almost persuade one that such can always occur with impunity. It is obvious, however, that the risks of contracting the foulest disorders while examining and treating many pharyngeal and laryngeal affections are great and many. The apparatus that have from time to time been invented

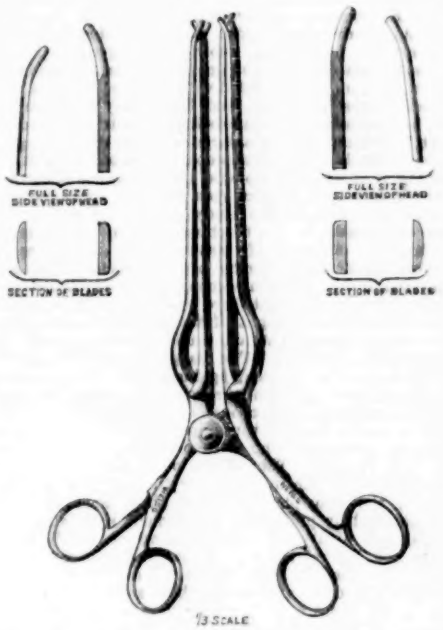


to minimise these dangers have never been universally adopted because of their expensiveness, clumsiness, and awkwardness for ready, quick adjustment. I have found this facial protective mask efficient, and so easy of application that it accomplishes the objects desired. Being composed of mica it is sufficiently light and transparent and can be washed and sterilised by boiling. It is very easy of adjustment, since it is simply looped over the ears by means of two elastic bands. The mask has the additional merits of durability and cheapness. Messrs. Mayer and Meltzer, 71, Great Portland-street, are the makers.

W. STUART-LOW, F.R.C.S. Eng.

NEW GASTRO-ENTEROSTOMY CLAMP.

THE accompanying illustrations show a new pattern gastro-enterostomy clamp which Messrs. Weiss and Son, Limited, of 287, Oxford-street, London, W., have made from my drawings. The clamp is a twin clamp and consists of two forceps; each forcep consists of a male and female blade. The male blade is straight and fits by an easy mechanical contrivance into the female. Both blades are grooved longitudinally, so that when they are closed they take a firm grip of the mass of tissue between them and do not in any way injure it—in fact, they do not even mark the tissues. The female blade has a double curve, a long one reaching from the tip to the beginning of a short, sharp curve. The length of this long curve is five inches and its outer surface is marked off in a quarter-inch scale, by means of which the length of the incision in the stomach and bowel can be exactly measured, a point of the greatest importance



as regards the neatness of the operation. The length of the clamp is about 11 inches. When the blades are closed on the mass of stomach or bowel the female blade presses the tissue against the male blade (there is no compression); it perfectly steadies the tissues and acts also as a hæmostatic forceps. When the forceps are opened for removal there is no tension on the three lines of suture already introduced, and the obtuse angle which the handles make with the blades gives room for both sides of the anastomosis to be examined with the forceps in position, which cannot be done with the twin forceps in which the blades are straight. I claim the following advantages for this clamp over those at present in use. These various points are well shown in the illustrations. (1) It is lighter and can be used without rubber coverings; (2) it acts as a hæmostatic forceps; (3) the inch scale enables the incisions to be measured accurately; (4) the bent position of the handles allows all parts of the anastomosis to be examined while the clamp is in position; (5) opening each blade of the forceps does not put the sutures on the stretch as some of the present modes do; and (6) it can be used for any sort of entero-anastomosis as well as gastro-enterostomy. I have to thank Messrs. Weiss and Son for the very careful way in which they have carried out my designs and suggestions.

T. GELSTON ATKINS, M.D., M.Ch., R.U.I.,
Surgeon, Cork South Infirmary.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT TORONTO.

(FROM OUR SPECIAL CORRESPONDENTS.)

THE SECTIONS.

ANATOMY.

TUESDAY, AUGUST 21ST.

The President of this Section was Professor ARTHUR ROBINSON (Birmingham) who delivered an address on

The Study and Teaching of Anatomy.

He said that there were systems of teaching anatomy which tended to obscure the wide scientific interest of the subject and to reduce it to a merely technical standard. This technical aspect was tending to become even more prominent owing to the increased demands which were made upon the student's time. Fortunately, there had always been in the medical profession many broad-minded men who had recognised that the man who had a wide knowledge of general principles was better adapted to meet unexpected circumstances than one who was merely provided with the memory of a certain number of observed facts, and fortunately the opinions of their broader-minded colleagues had hitherto prevailed. The result had been that in a large number of well-equipped medical schools and medical departments of universities the teaching of anatomy had passed into the hands of specialists—that is, into the hands of men who had spent the greater part of their lives in the study of the subject, and who were enthusiasts in its teaching, looking upon man as the highest outcome of nature and considering him and his relations as worthy of the most careful study. Still, though this was a movement in the right direction it must be borne in mind that there was a danger that specialists sometimes might lose sight of the practical applications of their subject and work at, and teach only, its more scientifically accurate features. The danger would be avoided if the electing bodies of teaching institutions would elect only those men who had been through the medical curriculum and who understood the needs of the profession and of the students, and if the men thus appointed would keep in touch with their colleagues who were practising the art of medicine and surgery. The object of a medical curriculum should be to give the men passing through it a wide knowledge of the principles on which they must rely in the practice of their profession, a sufficient knowledge of the details, and finally an understanding of man's place in nature and his relationship to nature's general laws. It should therefore be the object of anatomists to avoid entangling medical students with a superfluity of detail. They should insist upon a sound knowledge of the general relations and arrangements of the more important organs and parts of the body and a good knowledge of the general principles which underlie these relationships. They should endeavour to make their students acquainted with the general laws of growth and development, and carrying on the work done in the biological department, they should draw attention to man's relations to other animals in all cases where such relations were evident and were instructive of the methods by which man had been evolved. In conclusion Professor Robinson remarked: "I would strongly urge that if we wish to do well for our medical students and the medical profession as a whole we should deal more with general principles and less with detail than has generally been the case in the past."

Professor J. PLAYFAIR MCMURRICH read a paper entitled

A Preliminary Note on the Valves of the Iliac Veins.

He said that he had found that in a certain percentage of 30 cases examined valves were present in the external iliac veins. The valves varied both in number and completeness. In the common iliac vein, near its termination, there was a tendency to fusion of its anterior and posterior walls, and in one case along this line of fusion perforation of the adherent walls had occurred so that the vessel was divided into two parts for a short distance. It was suggested that both the valves in the external iliac vein and the fusion of the walls in the common iliac vein might have some influence in causing thrombosis.

The PRESIDENT remarked that possibly the high percentage which Professor McMurrich had found would have to be modified later, for in six cases which he had specially examined no valves were present.

Professor G. CARL HUBER (Michigan) demonstrated with lantern slides

The Origin of the Arteriæ Rectæ of the Mammalian Kidney.

He showed that all the arteriæ rectæ were efferent branches of glomeruli. This was important in that they now knew that all the blood passing to the different parts of the uriniferous tubules was blood that had first passed through the glomeruli, therefore altered blood, a point which physiologists must take into consideration in discussing the secretory activity of the kidney tubules.

Professor HUBER then exhibited a second series of slides showing

The Form of the Uriniferous Tubules of Certain of the Lower Vertebrates.

The character of the duct system and the form of the uriniferous tubules of different forms of reptiles (turtle, snake, lizard, and alligator) were discussed. As there was no pelvis in the reptilian kidney the ducts were easily worked out by injection. The form of the tubule was ascertained by the wax-plate reconstruction method. The tubule in all the forms studied consisted of a small Malpighian corpuscle, a short neck, a simple proximal convoluted portion, a short narrow segment with low epithelium, and a portion which might be known as a distal convoluted portion—facts similar to those found in the mammalian tubule, although there was no loop of Henle.

Professor MCMURRICH suggested that the corrosion method employed by Professor Huber might with advantage be applied to work on other organs.

Professor H. H. DONALDSON (Chicago) then read a paper on behalf of Dr. S. WALTER RANSOM.

On the Architecture of the Spinal Ganglion.

He described how on the section of the dorsal ramus of the second cervical nerve of the white rat—which contained about 37 per cent. of all the afferent fibres belonging to this spinal nerve—it was found that the subsequent chromatolysis affected more than 80 per cent. of the 8000 cells in the associated ganglion. Two months after the operation it was found that some 4200, or 52 per cent., of the cells had degenerated and disappeared. The disappearing cells were for the most part those of small diameter. This loss of cells followed a section of from 1500 to 2200 medullated fibres and hence the fact that from two to three cells disappeared as the result of cutting each medullated fibre called for explanation. The most plausible hypothesis was that these degenerating cells were represented in the nerve by unmedullated fibres and degenerated as the result of the section of these fibres. The search for these hypothetical fibres was in progress. Under the title "Retrograde Degeneration in the Spinal Nerves," the principal data had been published in the *Journal of Comparative Neurology and Psychology*, vol. XVI., No. 4, 1906.

Professor HUBER and other members joined in the discussion.

Dr. R. R. BENSLEY then gave the results of his work on three subjects, the first of which was

The Structure of the Cardiac Glands of Mammals and their Phylogenetic Significance.

From the study of the so-called cardiac glands in various mammals Dr. Bensley had come to the conclusion in 1903: 1. That the cardiac glands are mucous glands. 2. That the cells of the cardiac glands are fundamentally different from the chief cells of the body of the fundus gland, inasmuch as the latter contain two characteristic substances recognisable by staining and micro-chemical reactions, which are the chemical antecedents of their secretion—namely, the zymogen granules and the prozymogenic basal filaments. Both of these substances are absent from the cells of the cardiac glands. 3. That the cardiac gland cells are closely related to the mucous chief cell of the neck of the fundus gland and to the pyloric gland cell. 4. That the cardiac glands are decadent or retrogressive structures derived from fundus glands by the progressive disappearance of their most highly differentiated elements, the chief cells of the body of the gland and the parietal cells. In two recent articles Haane had arrived at conclusions which were the exact opposite of Dr. Bensley's—namely, that the

cardiac glands were non-muciparous structures which differed from the fundus glands and from the pyloric glands and which were physiologically important, inasmuch as they secreted an amolytic ferment. The work on which this paper was based had been undertaken with the object of determining which of these conflicting views was correct and had, Dr. Bensley considered, fully confirmed the conclusions at which he had previously arrived. That the cardiac glands were mucous glands was evidenced by the fact that in every case examined the secretory contents of the cells of these glands was stainable with muchæmatein and with mucicarmine, and, further, the gradual transition in the type of cells between the foveolæ and the bottom of the gland indicated a close relation between the cells of the surface epithelium and those of the gland which would lead one to suspect their mucous properties even if the confirmatory stains could not be obtained. That Haane was unable to stain the cells of the cardiac glands of the pig with muchæmatein and mucicarmine was, Dr. Bensley believed, probably due to difference in technique, as he himself was always able to get positive results. In discussing the results obtained by Haane in the cardiac glands of the ox, sheep, and goat respectively, the fundamental question to be answered was that dealing with the homogeny of these structures. For if the glands occupying the area between the psalterium and glandular portion of the stomach had been derived from the same antecedent structures by the operation of the same factors, then the differences which might be observed between them were not fundamental in nature.

The second subject considered by Dr. BENSLEY was

The Cytological Characters of the Cellular Components of the Islands of Langerhans.

Dr. Bensley and Mr. Lane were of the opinion that the cells composing the islands of Langerhans were definite and quite distinct from the alveolar cells. In the pancreas of the guinea-pig chromophile cells were present which stained with neutral gentian. These cells were large and somewhat branched; the nucleus contained nucleoli which were oxyphile. The ordinary cells of the islets were clear. In rodents and ungulates these cells were fairly abundant and could easily be distinguished by their type of nucleus from the centro-acinar cells.

Professor HUBER remarked that it was possible to distinguish the alveolar cells by ligaturing the pancreatic duct and thus producing changes in these cells.

The third subject discussed by Dr. BENSLEY was

The Structure of the Lacrymal and Harderian Glands of Mammals.

He described the character of the cells in different parts of the gland tubules of the ox and sheep. By employing different methods of staining several types of cell could be distinguished. Near the duct the cells were small and granular, at a point nearer the fundus of the gland the cells were larger and more complex, while the cells at the bottom of the alveolus were still more complex, notwithstanding the fact that the lacrymal secretion was chemically a very simple fluid. The specimens were stained with "neutral gentian" and other reagents.

Professor DONALDSON drew attention to the cells of the ependyma in the cerebral ventricles which also secreted a simple fluid and were very similar in structure. He remarked also that the nucleus in these cells shifted its position after birth.

WEDNESDAY, AUGUST 22ND.

The proceedings were opened by a paper read by Professor A. MELVILLE PATERSON (Liverpool) on

The Ligamentous Supports of the Pelvic Viscera.

He remarked that from observations on the human subject, living and dead, and by dissections of various mammals, it was apparent that the accepted description of the pelvic fascia and of its relations to the pelvic viscera was altogether erroneous. Both in the male and the female the rectum was wholly unconnected with the pelvic fascia down to the anal canal. It occupied a rectal channel and was enveloped by a dense layer of extra-peritoneal tissue devoid of fat. The rectum was thus able to distend and to collapse without being affected by the conditions of the genito-urinary organs. The genito-urinary organs (prostate in the male, urethra and vagina in the female) were fixed and suspended by a bilateral suspensory ligament which swept forward from the ischial spine and split to inclose the organs. On each side these organs lay in contact with the levator ani and the fascia covering its pelvic surface. The bladder in both sexes and the uterus in the female were intra-pelvic organs. This suspensory ligament was highly vascular. On each side it was provided with a channel for the vesical vein; anteriorly the fascia was split into several layers by the prostatic plexus and the free crescentic fold of the fascia was particularly vascular on account of the accumulation of veins passing to join the internal iliac veins. The vessels were contained in sheaths among the layers of the fascia, and not between the fascial sheath and the prostatic capsule. The layers of the suspensory ligament were upper and posterior. The upper layer was traceable in continuity with the lateral and anterior true ligaments of the bladder. The posterior layer passed between prostate (or vagina) and rectum and was attached to the perineal body at the base of the triangular ligaments.

Professor W. S. MILLER read a paper on the Distribution of Lymphoid Tissue in the Lungs.

Dr. DAVID WATERSTON (Edinburgh) read a paper entitled

A Preliminary Note on the Brain and Skull in Mongolism.

He briefly pointed out the principal features, clinical and anatomical, which were distinctive of the condition of congenital imbecility known as mongolism. The examination of a series of brains and of an entire skull showed certain distinct and characteristic changes. The cerebral hemispheres were, in all, large and well convoluted. The orbital surface of the frontal lobe remained very oblique, however, instead of becoming nearly horizontal in position, the insula was not completely covered over by the opercula, and the first temporal convolutions remained small and failed to share the general cerebral development. The cerebellum, medulla, and pons Varolii were usually small in proportion to the cerebrum. The changes in the skull were described and analysed.

Professor DONALDSON called attention to the fact that during the later months of intra-uterine life the relative weight value of the cerebellum and brain stem increased and that the percentage value of these portions might indicate the age at which the normal growth processes had been first disturbed.

Professor C. R. BARDEEN gave a lantern demonstration illustrating

The Development of the Ova of the Toad, Fertilised by Spermatozoa which have been exposed to Roentgen Rays.

He said that ova which were fertilised by spermatozoa which had been exposed to the x rays, apparently developed in the early stages normally, no alteration being observable in the method of segmentation. At the time when the embryo was beginning to take form, marked differences were to be noted in the development of the central nervous system, the sense organs, and in the vascular system, and not infrequently monsters were developed. The results of the experiments showed that the spermatozoa might be affected by external conditions. If spermatozoa were removed from the body they usually lost their power of fertilisation within a few hours. If exposed to x rays this power was lost earlier. Speaking generally, the effects were observable chiefly in those organs in which the cells underwent the highest differentiation.

Dr. BENSLEY, Professor PRIMROSE, and Professor DONALDSON joined in the discussion.

Dr. G. L. STREETER (Baltimore) gave a brief report on

Some Experiments on the Developing Ear Vesicle of the Tadpole.

He described the development and behaviour of tadpoles following unilateral and bilateral removal of the ear vesicle and acoustic ganglion. At the time of operation the larvæ were three millimetres long; they were then followed in their growth up through the metamorphosis. The results of these experiments demonstrated that in tadpoles the ear vesicles were the essential factor in equilibration and secondly one ear vesicle was capable of performing the work of both, but when both were removed no other organ was able to compensate for their loss. The ear vesicle when transplanted to some other part of the body continued in its histological development but gave no evidence of establishing functional relations with the brain.

Dr. GEORGE J. JENKINS (London) read a paper on

The Morphology of the Hip joint.

He stated that in the human embryo up to 2·7 centimetres

in length there was a primitive acetabulum formed of ilium and ischium, the os pubis being kept out of the fossa by a mass of prechondral mesoblast. Eventually the os pubis formed part of the acetabular cavity as in the adult. There were three membranous defects in the margin of the cartilaginous acetabulum. The ischio-pubic defect was partially obliterated by the growth of ischium forming the floor of the cotyloid fossa. The ilio-pubic and ilio-ischial notches were almost entirely obliterated by growth of the iliac cartilage. The growing margins of the cartilages were indicated in a reconstruction model of the joint in a 3·2 centimetre embryo by ridges. In the 1·8 centimetre embryo the head was represented by a prechondral cap on the upper end of the chondrified shaft. There was a relatively large flattened area on the head which was in the morphological position of the impression for the ligamentum teres of the adult. The capsule of the joint in the adult consisted of true and false capsules. The latter was derived from extra-capsular structures. The true capsule of perichondral origin consisted of two parts, a primary part which was attached about the margin of the primitive acetabulum and a secondary part which was formed when the os pubis had advanced into the joint. The ligamentum teres was a part of the primary capsule and contained only a small amount of extra-articular tissue. The retenacular bands were formed in association with three groups of nutrient vessels passing to the head of the femur. The antero-inferior and postero-inferior bands had an origin in the mass of loose tissue found on the inferior aspect of the neck in young embryoes. The cells of the synovial membrane were derived from extra-articular mesoblast and invaded the skeletogenous mesoblast in a layer several cells thick. Up to the time of the invasion the anlage of the innominate bone was continuous with that of the femur and this invasion of external mesoblast might be regarded as the means of separating the innominate bone from the femur.

Dr. R. J. GLADSTONE (London) gave a description of

A Symmelian Monster (Sympus Dipus).

He said that the two lower limbs were fused so as to form a single median lower limb. Each lower limb was rotated outward so that the patella was behind and the heel directed forward. The peroneal borders of the two lower limbs were fused along the middle line of the composite limb. There was an imperforate penis but no anus. The colon ended in the urinary bladder; there was thus a persistence of the cloacal stage of development. The kidneys and ureters were absent but the suprarenal bodies were present and had the normal histological structure. The main artery of the abdomen divided into a large artery which passed into the umbilical cord and a vessel which ran down the front of the vertebral column and divided into *external* iliac arteries. The renal arteries were absent. The innominate bones were dislocated from the sacrum and bent forward. They were united together by their posterior borders. The tuberosities of the ischia and the ischial and pubic rami were also fused, so that there was no perineal region and consequently no anus or urethra. Dr. Gladstone believed the condition to be due to a fusion of the post-axial borders of the limb buds over the cloacal area.

Professor C. J. PATTEN (Sheffield) gave a lantern demonstration on

A Series of Gorilla and Chimpanzee Skulls.

He demonstrated variations in the contour of the face and cranium in the chimpanzee and gorilla at different ages. In the chimpanzee the face might be narrow or broad. The males on an average were broader in the face than the females, but this was by no means a safe guide in distinguishing the sex. In broad-faced forms of this ape the lateral horizontal diameter of the orbit often exceeded the vertical, and the supraciliary ridges were on the whole more strongly developed. In the gorilla, most of the skulls, with the exception of adult males, had a vertical diameter of the orbital rim slightly exceeding that of the lateral horizontal diameter. In the skulls of young gorillas there were several distinctive characters by which they differed from adult skulls, notably in the breadth between the parietal eminences and in the length between the external angular process and the external occipital protuberance.

Dr. Ross E. HARRISON read a paper on

The Development of the Nerve Elements in Vertebrates.

Two main questions had to be solved: (1) Is the constitution of a nerve unicellular or multicellular? and (2) If unicellular, whence is the nerve fibre derived? Dr. Harrison first drew attention to the futility of attempting to solve these questions entirely by embryological methods, and to the necessity of experiment. Any part of a nerve might be removed or transplanted, and thus the environment of a nerve might be altered. From experiments, such as removal of the neural crest on one side in an early stage of the development of the central nervous system, Dr. Harrison concluded that the nerve was an outgrowth of the ganglion cell and that the sheath cells took no part in its development. If a portion of the spinal cord was transplanted nerves would grow out from it into mesenchymatous tissue. A limb bud might be transplanted from the body of one embryo to that of another; it would then acquire a system of nerves which was similar in its distribution to that of the normal limb. The nerves which connected the transplanted limb bud with the central nervous system were very small. It was found possible to examine under an immersion lens the cut ends of a nerve which had been divided. The ends were seen to come together and unite in about 24 hours; degenerative changes took place in the peripheral nerves but if a connexion was established between the cut ends within 72 hours the degenerative changes were arrested.

The PRESIDENT, Professor MCMURRICH, Professor DONALDSON, and Professor BARDEEN joined in the discussion which followed.

Professor THOMAS G. LEE (Minnesota) read a paper on

The Early Development of Geomys Bursarius.

He said that geomys was a genus of small rodents belonging to the family geomyidæ, all members of which family were peculiar to North America. Geomys bursarius, or the "pocket gopher" as it was commonly called, was found in the Mississippi valley, lived under ground, was strongly photophobic, rarely came to the surface, and was characterised by large cheek pouches which opened externally. Professor Lee, after several years of collecting, had succeeded in obtaining an unbroken series of pregnant uteri in all stages of development. Many of the following points were peculiar to geomys and differed from corresponding stages so far described for any other mammal, while in other features geomys showed many resemblances to several of the other rodents. 1. Geomys developed entirely outside the uterine cavity in a decidual cavity formed in the ventral portion of the uterine mucosa. In this it resembled the guinea-pig among rodents and also resembled the human development. 2. The blastocyst at the time of the perforation of the uterine epithelium was rather large. It was didermic, consisting of the trophoblast, which was continuous with the margins of the germinal area, and of an entodermal vesicle which nearly filled the blastocyst. Rauber's layer would seem to be lost at the time of, or shortly after, perforation. 3. The decidual cavity was formed by contact of the trophoblast with the ventral portion of the uterine mucosa, this bringing about a softening and destruction of the connective tissue. In the outer walls of this cavity there was developed a very large number of capillary blood-vessels which later became intimately associated with the yelk-sac placenta. 4. At the point of rupture the epithelium bordering the opening became slightly everted and this opening did not close up as in the guinea-pig nor did it become filled with a fibrin clot as in man, but it remained open and the epithelium cells were practically unchanged until later in the development when they became destroyed by the trophoblastic tissue of the fœtal placenta. 5. The trophoblast became adherent to the everted epithelial margin of opening in a zone somewhat external to the germinal area. This occurred at the time of the escape of the blastocyst from the uterine lumen. 6. There was the so-called inversion of layers. The germinal area sank into, and invaginated, the entodermal vesicle or yelk-sac, this cup-like structure being suspended by the adhering trophoblastic zone noted above. The cavity of the uterus was for the time being continuous with the inner portion of this cup. 7. The amnion was formed by a folding over of the outer margin of the germinal ectoderm, the adjacent trophoblast forming the serosa or false amnion which now separated the uterine cavity from the extra embryonic body cavity. 8. The trophoblastic layer constituting the false amnion now underwent a folding over similar to the formation of the true amnion. The edges of the folds united to form a two-layered rather rounded plate of trophoblast which now constituted the fœtal placenta. 9. This placental plate where it came in contact with the uterine

epithelium caused a destruction of the cells which was followed by an intimate union with the uterine mucosa. 10. The allantois was very much later in its development than in the mouse and guinea-pig and did not become joined to the true placental area until after the embryo was well outlined. On the other hand, the yolk-sac placenta soon became highly developed and remained active during all the early period of development.

The PRESIDENT remarked on the extremely interesting character of the communication and pointed out how valuable some of the facts discovered were in connexion with the general history of placenta formation.

In answer to a question from Professor MCMURRICH, Professor LEE stated that there was no allantoic connexion between embryo and placenta until after the chief organs of the embryo were differentiated.

Professor B. C. HARVEY spoke on

The Chromaffine Character of Certain Parietal Cells of the Stomach.

He pointed out that the chromaffine parietal cells of the mucous membrane of the stomach may possibly be produced from other cells. Their number could be increased by injury to the mucous membrane of the stomach. He also pointed out that chromaffine cells of a similar nature were found in other situations in the body as well as in the mucous membrane of the stomach.

Professor HARVEY also presented a communication on behalf of Dr. F. G. WILSON on

An Unusual Peritoneal Anomaly simulating Retro-peritoneal Hernia.

The small intestines were concealed by a fold of peritoneum springing from the posterior abdominal wall just internal to the descending colon.

Dr. C. E. SHAMBAUGH read a paper on

The Development of the Stria Vascularis of the Cochlea.

He said that the constituent cells of the stria vascularis were clearly demonstrated to be derived from the ectodermal epithelium of the cochlear tube and were not derived from connective tissue elements. Dr. Shambaugh also gave a very interesting demonstration of microscopic sections illustrating his paper and showing the circulation of the labyrinth of the ear in the pig.

Professor BARDEEN and other members joined in the discussion.

A very beautiful series of specimens was also shown by Dr. G. REVELL illustrating the Preparation of the Human Stomach to Illustrate Various Methods of Differentiating the Cellular Components.

Another series of specimens was exhibited by the PRESIDENT, showing the Development of the Vitreous Body of the Eye.

The proceedings of the section terminated by a vote of thanks being proposed by the PRESIDENT to Professor ALEXANDER PRIMROSE of the University of Toronto for the very able manner in which he had provided for the wants of the section, both as regards the organisation of the programme and the very cordial way in which he had placed the whole of his department at the disposal of the society. The vote was seconded by Professor HUBER and was carried with acclamation.

PATHOLOGY AND BACTERIOLOGY.

THURSDAY, AUGUST 23RD.

Professor J. J. MACKENZIE presided in this Section. The proceedings commenced with a valuable paper by Dr. HAMILTON WRIGHT on

The Nature of Beri-Beri.

He stated his conclusions, illustrating them by diagrams, that beri-beri was an acute infectious disease which ran a fairly definite course, ending in recovery about the fifth or sixth week, or in various forms of residual chronic paralyses; that the disease usually began by the invasion of the gastro-duodenal region by a bacillus; that the local action of this bacillus in the neighbourhood of the gastro-duodenal mucosa constituted the primary lesion of beri-beri and induced the gastro-duodenal syndrome which generally ushered in the flaccid palsy and other nerve disturbances of the acute disease; that the remote effects of the bacillus were induced by an extra-cellular toxin elaborated at the site of the primary lesion; and that the causal organism probably never extended within the body. He presented five clinical cases and one post-mortem examination in support of his views and bacteriological evidence that confirmed his previous observation that in no stage of beri-beri was there a bacteriæmia. A series of researches showed, however, that the blood of no sort of beri-beric would agglutinate an organism from broth cultures made from the stools of those suffering from the malady. He claimed that no valid criticism had been brought against his conception of the nature, course, and termination of beri-beri as based on an extended observation of the disease, clinically, pathologically, and experimentally. It was to be regretted, however, that they were no nearer the isolation of the bacillus which was almost constantly associated with the primary gastro-duodenitis.

The discussion was continued by Dr. J. J. KINYOUN, who spoke on several cases which he had observed, and also by Dr. F. E. NOVY (New York). Dr. HAMILTON WRIGHT replied, stating that he believed that fæcal contamination transmitted the disease. Dudgeon had confirmed the character of the organism as a strict anaerobe.

Experimental Glanders.

Professor M. NICOLLE (Pasteur Institute), who spoke in English, read two papers, entitled "Infection and Intoxication in Experimental Glanders" and "Hypersensibility and Immunity in Experimental Glanders," which described the principal results of his researches, as yet unpublished, which he had conducted during the last four years in experimental glanders. Injection of the virus into the peritoneal cavity of the adult male guinea-pig in infectious doses always produced death, but the phenomena varied with the activity of the germs and the dose employed. An acute peritonitis or genital localisation might result, the latter described as scrotal, ectopic, and ephemeral. The sensibility of the peritoneum of the female guinea-pig was relatively weak towards this microbe. Intra-pleural inoculations in the two sexes were quite comparable to the intra-peritoneal inoculation. According to the virulence of the microbes and the susceptibility of the animals subcutaneous and intramuscular inoculations gave rise to transient indurations or abscesses. These might be accompanied or not by glandular reaction, pustules, abscesses, massive engorgements of the limbs, orchitis, and paraplegia. Into the circulatory system inoculations resulted in generalised glanders. In regard to hypersensibility and immunity in experimental glanders Professor Nicolle said that the hypersensibility to living or dead glanders virus produced by this same virus or by others, as well as the hypersensibility to the latter produced by the former is found to occur in the following fashion. The hypersensibility towards dead glanders produced by dead glanders germs could reveal itself by two primary phenomena of a toxic nature, the local and general reaction and by secondary phenomena of an infective nature, the lighting up or development of extraneous diseases. This hypersensibility was due to a substance of the nature of an antibody. The hypersensibility towards dead glanders germs produced by living glanders germs revealed itself as in the preceding type but further produced a lighting up of latent glanders lesions. Other types of hypersensibility had been studied. For the first time attempts at immunising guinea-pigs against glanders had been attended with success. It might be accomplished by repeated injections of dead microbes in "inoffensive" doses, or similarly by repeated injections of living microbes, or finally by inoculating living microbes in infective doses but in such a way that the animal would recover from the disease without complications. Every time a guinea-pig was immunised against glanders it formed anti-microbic substances and substances regulating the hypersensibility known as "good" and "bad" antibodies. The serum of infected guinea-pigs offered no agglutinating power superior to that of normal animals, while the serum of immune guinea-pigs possessed to a much more marked degree this property.

Professor J. G. ADAMI (Montreal), in discussing Professor Nicolle's papers, dwelt upon the parallelism between glanders and tuberculosis.

Dr. KAUFFMAIN described an interesting series of clinical experiments on

The Excretion of Potassium Iodide after Ingestion as an Index of Renal Competency.

A good renal competency as evidenced by the excretion of

urea, he said, might appear low by iodide of potassium excretion as calculated by colorimetric tests. In the future the administration of the drug might prove of value as a guide of the renal competency.

Professor F. B. TURCK (Chicago) described with diagrams his experiments on

The Pathogenesis and Pathology of Ulcers of the Stomach.

Duodenal and gastric ulcer could be produced by feeding dogs with the bacillus coli communis for variable periods. This observation for the first time afforded a basis for the real etiology of peptic ulcer. Agglutination could be obtained in the blood to bacillus coli communis of the dogs which had thus been fed.

The Forms of Arterio-sclerosis.

A joint meeting with the Section of Medicine was then held, at which a discussion on this subject was opened by Professor W. H. WELCH (Johns Hopkins University). The various types of the disease were fully described as met with in Professor Welch's experience and the address was received with applause.

Dr. KLOTZ (McGill University, Montreal) described his experimental work with adrenalin in conjunction with vaso-dilator drugs on the arteries. The experimental arterial lesions produced in animals were of two kinds, either a degenerative one, affecting mainly the media, or a regenerative one, in which the intima proliferated, while little or no degenerative change was seen. It was found, too, that the substances which were used to produce the former belonged to the class of high-pressure drugs, but at the same time it was likely that the high pressure did not itself lead to the medial lesions noted; there was a distinct degenerative action of the drug on the muscle fibres of the media. Elastic fibres became affected later. The latter once giving way led to aneurysmal dilatation. The degeneration was of a fatty nature. The intimal regeneration was consequent to bacterial toxins, the proliferation being confined to the endothelial and subendothelial cells. When only intimal lesions were present aneurysms were not formed. In man lesions of a degenerative nature were met with in the Moenckeberg type of peripheral arterio-sclerosis and with the form of this disease as it was found in the aorta, both of which processes were confined to the media. The experimental bacterial lesions of vessels simulated the endarteritis chronica deformans which developed pearly intimal plaques. Adrenalin was a selective drug on the muscle of the circular coat and produced calcification and aneurysms in from two to three weeks. In the bacterial lesions cultures of a low virulence were used.

The PRESIDENT showed most interesting lantern slides illustrating his work on arterial lesions. One section showed distinctly *bone* metaplasia in an artery in which marrow cells were present. He considered that the degree of damage to the media determined the degree of reaction in the intima, repeating Sunikaya's experiments on the aorta. If the damage was too severe there was no reaction. Damage to elastic lamina followed severe damage of muscle fibres and necrosis.

Professor L. ASCHOFF (Marburg), who spoke in German, was warmly greeted. He gave his findings as to the distinctions of arteries according to their functions, whether peripheral or central.

Dr. PEARCE (Albany) continued the discussion. He said that experimental lesions were of great value in explaining degenerative and regenerative changes in vessels. The physiological study of the action of adrenalin was of great value in explaining the problem of cardio-vascular pathology. He believed that a temporary ischæmia in capillary areas produced lesions in the heart and blood-vessels.

Professor T. CLIFFORD ALLBUTT (Cambridge) said that he came to the discussion as a learner and spoke only from the clinical aspect. Arterio-sclerosis was a purely pathological term and Professor Welch in opening the discussion had shown how this term should be used. Adaptation of arteries might be regarded as the yield of the normal resources of the body to mechanical causes, such as pressure. Four or five years were taken for the cardio-vascular system to take on adaptation. Compensation was left behind.

Professor ADAMI regarded arterio-sclerosis as a reaction on the part of the vessel. The types of arterio-sclerosis were grades of this disease.

Professor WELCH, in reply, said that he was much interested to hear Professor Aschoff's views as to the distinctions of arteries according to their function, which agreed with his own observations. As to the propriety of the use of the word "adaptation," he agreed with Professor Clifford Allbutt.

Dr. ARMAND RUFFER (Cairo) contributed a valuable paper on

The Diagnosis of Cholera Asiatica.

His experiences in Egypt in connexion with the quarantine of pilgrims in that country was that cholera vibrios in the dejecta were not a danger, though bacteriologically they were cholera. The clinical side in diagnosis was of high importance.

Miss AMOS SHELDON (Alexandria) and Professor FLEXNER (New York) also spoke.

FRIDAY, AUGUST 24TH.

The meeting commenced by a demonstration by Professor F. G. NOVY and Professor R. E. KNAPP (Ann Arbor) of beautiful lantern slides illustrating

The Nature of Spirochætæ.

The organism was obtained from a case of relapsing fever which occurred in New York in 1905 and was described by Dr. Carlisle. It differed from that of the Bombay spirillum in being apposed end to end with a single terminal flagellum, whereas the latter did not give rise to a continuous spiral. The question of plurality of relapsing fevers was rendered all the more prominent by the demonstration that the spirillum of African tick fever differed from spirillum Obermeieri. Tick fever spirillum formed curves or figures of 8 and had numerous flagella. The spirochætæ probably did not belong to the protozoa (and more especially to the trypanosomes) but were bacteria. There was no definite nucleus, blepharoplast, undulating membrane, or flagellum, structures seen in the trypanosomes. There was evidence of transverse division into cells 8μ long and rapid multiplication ensued in the blood of rats. It could produce active immunity in animals, like the cholera spirillum, unlike protozoa which might exert a preventive but not a germicidal or curative effect. It was indifferent to the presence of air. Rats had been immunised by inoculation and the "recovered" blood possessed two immunity units per cubic centimetre. Blood could be hyper-immunised to contain 500 units or was 250 times more active than "recovered" blood. The infection could be prevented in mice and monkeys also. The immune blood possessed a marked germicidal and agglutinating action *in vitro* and *in vivo*.

In the discussion that ensued the PRESIDENT asked what evidence there was of cure in animals which had been inoculated and Professor NOVY replied that the spirilla disappeared from the blood.

Dr. F. W. MOTT (London) gave a lantern slide demonstration of

The Changes Produced in the Nervous System by Chronic Trypanosome Infections.

The material for examination used was (1) 30 cases of human sleeping sickness, including two Europeans; (2) several cases of trypanosoma Gambiense infection in which there was glandular infection, but in which the nervous system had not yet become involved; (3) tissues of ten monkeys which had been inoculated with trypanosoma Gambiense; (4) nervous tissues of oxen, inoculated with Jinga trypanosome, probably a form of nagana or the tsetse disease; and (5) animals experimentally infected with surra. In the lymph glands, acute, subacute and chronic, and chronic fibrotic changes were observed. In the acute stage there were endothelial cell proliferation of the vessels, lymphocyte proliferation, and nuclear mitosis of the branching retiform cells forming the sustentacular framework of the glands. Similar changes were observed in the perivascular and meningeal lymphatics of the central nervous system. There was chronic inflammatory interstitial change with neuroglia cell proliferation and overgrowth of the central nervous system produced either by the invasion of the cerebro-spinal fluid or by a toxin produced in the lymph glands. Degenerative changes in the leucocytes and plasma cell accumulations could be traced to final disintegration. The demonstration of trypanosomes in sections was extremely difficult. In several thousands of sections of tissues of sleeping sickness not more than half a dozen showed trypanosomes, probably because there was a terminal microbial infection, usually diplostreptococcal. Changes in the central nervous system in dourine or mal de coit were also described, the posterior spinal ganglia being profoundly affected. Orr and Rowes had shown experimentally that poisons were conveyed along the nerves to the posterior roots of the spinal cord and it was

probable that in mal de coit the lymph glands affected produced toxins which were conveyed along the lymphatics of the pelvic plexus of nerves to the lumbo-sacral ganglia primarily and to all the spinal ganglia eventually.

Professor WELCH in discussing the paper said that streptococcic infection caused death in protozoon infections and also in small-pox.

Dr. J. M. BEATTIE (Edinburgh) asked whether the lymphocytes in the perivascular lymphocytosis were from the blood or proliferated around the vessels.

Professor ADAMI asked whether there were any other nerve diseases showing glia proliferation as in sleeping sickness.

Dr. MOTT, in reply, stated that there was a diplostreptococcal infection in 80 per cent. of cases of sleeping sickness bringing about a fatal end. Points of suppuration in the lymph glands were observed. Professor Rose Bradford had shown that the blood in a case of sleeping sickness in University College Hospital was sterile. Lymphocytes might be formed in the lymphatics of the nervous system and glia cell proliferation also occurred in general paralysis, when it was a substitution process.

Professor M. NICOLLE and Professor F. MESNIL communicated a paper on

The Treatment of Trypanosomiasis by the "Colours of Benzidine."

The therapeutic action of symmetrical diazo compounds was discussed. The benzenic and naphtholenic chains gave rise to inactive derivatives The derivatives which were active *in vivo* against nagana were solutions having a blue, violet, rose or red colour, and were inactive *in vitro*. Asymmetrical diazo compounds offered no advantages over the symmetrical, but rather the reverse, and triazo and polyazo compounds never displayed any curative power even when they contained good lateral chains. The treatment of (experimental) mal de caderas in mice and (experimental) surra in mice and human trypanosomiasis was discussed, and also the treatment of the experimental infection due to trypanosoma dimorphon (mice). The best lateral chain for the four preceeding trypanosomiases was ac. H.; for the first three diazo dichlorobenzidine, for the last paradiamino diphenylurea. For the infection of trypanosoma dimorphon they found the opposite condition. It was safe to hope that a means of distinguishing trypanosomes by the help of a chromo-therapeutic criterion would be arrived at.

Professor ADAMI said that the work on chemical constitution and therapeutic action, initiated by Ehrlich, on which Professor Nicolle's contribution was based, was of the highest value.

Professor R. T. HEWLETT (London) asked whether nephritis resulted from trypan red.

Professor HEWLETT gave an excellent lantern slide demonstration of

A Beri beri-like Disease of the Monkey,

with a description of the pathological histology of beri-beri. Tube casts had been repeatedly found by him at the London School of Tropical Medicine in numbers in the urine in beri-beri, while Dr. Daniels thought that a urinary channel of infection of beri-beri was more likely than a fæcal one, though both hypotheses were unlikely.

Dr. KINYOUN had observed 20 cases of a beri-beri-like disease in monkeys which occupied one cage.

Dr. BEATTIE gave a lantern slide demonstration of

A Sporozoon of the Nasal Mucous Membrane, the Rhinosporidium Kinealyi (Minchin).

The sections showed the presence in the mucous membrane of minute cysts with a chitinous envelope. The walls were of varying thickness. The cysts were 0·1 to 0·3 millimetre in diameter and filled with undifferentiated protoplasm; a nucleus and nucleolus could be made out. In others chromatin masses were seen corresponding with the trophozoite stage of the sporozoon. Cysts from six to eight millimetres in diameter were filled with spherical or ovoid bodies, the spore morulæ. Each spore morula had a cell wall. They discharged by rupture or through a pore into the surrounding tissues, forming an abscess, and they would probably be found in the discharges. Finally, granulation tissue invaded the cyst.

Dr. HEWLETT communicated a paper by Dr. DE KORTÉ on

The Virus of Small pox and Vaccinia.

Hanging drop preparations of the lymph of the vesicle showed a large number of morphological elements like pus cells, containing highly refractile grains within the cell substance even after 12 months of storage. Large cells were seen with nucleus and karyosome, limited by an ectosarc, the encysted parasite. They were present in fresh active glycerinated calf-lymph; also when it was suspended in saline solution. Morula-like bodies were also present, in addition to spore, sporidium or amœba, encysted parasite, and morula. They were not leucocytes and not epithelial cells.

Dr. J. R. BALLAH (Montreal) described his

Experiments with Vaccine Lymph,

his method of obtaining typical vaccine lesions in the animals of the laboratory, the effects of dialysis of vaccine lymph, and the attempted culture of the vaccine organisms *in vitro* and *in vivo* in celloidin capsules. The dialysate was active after 18 hours. The bodies described by Dr. de Korté were to be regarded as albuminoid or lipoid and not even living. A sterile inactive calf serum was added to 2 per cent. broth (+ 1·5) and 20 per cent. hay infusion in equal volume and inoculated with sterile vaccine emulsion (Green's chloroform method), but no growth ensued. With an active vaccine emulsion containing a non-virulent streptococcus in some cases there was a creamy cloud at the top of the fluid which was noteworthy. This appeared to be associated with the production of alkali. It consisted of minute spherical highly refractile bodies varying in size, being just visible. They could not be fixed or stained and inoculation experiments had led to no indubitable results. Possibly they were invisible or ultravisible bacteria.

Dr. KINYOUN had seen a vaccine virus which had been stored in the "cold" for five years and which was very active.

Professor ADAMI regarded the large spherical bodies described as allied to the lipoid bodies in myelin and as of doubtful significance.

Dr. BEATTIE contributed a paper on

The Bacteriology of Rheumatic Fever.

He had examined culturally and by inoculation 12 strains of streptococci and compared them with the micrococcus rheumaticus isolated from three cases of definite acute rheumatism. This organism grew copiously on gelatin and formed much acid, and precipitated the bile salts in McConkey's bile salt lactose broth. The streptococci used as comparison gave no reaction in this medium. On inoculation with streptococcus there was purulent arthritis and once there resulted an endocarditis; pyæmic abscesses in the kidney and spine occurred also. With the micrococcus rheumaticus there was arthritis, non-purulent, in 60 per cent. of cases and in 33 per cent. endocarditis. Dr. Beattie failed to get cultures from blood but the organism could be grown from pieces of the synovial membrane removed from the knee-joint post mortem. The organism differed from streptococcus in the results of injection; it was not an attenuated streptococcus, and in uncomplicated cases of acute rheumatism the organism was not found usually in the blood or in the joint exudates.

Dr. G. A. CHARLTON (Regina) said that a series of experiments were undertaken in the pathological laboratory of the McGill University during 1902–03 which in general confirmed the results of Dr. Beattie's work. A micrococcus was isolated from three cases of acute rheumatism. It was similar to a streptococcus morphologically and culturally, but the micrococcus grew more readily. Inoculations resulted in the production of arthritis without pyæmia. Inoculations of strains of streptococcus gave arthritis with pyæmia in most cases. The experiment was not completed or as yet reported.

Professor R. MUIR (Glasgow) expressed appreciation of the value of Dr. Beattie's work and asked whether the organism occurred in subacute rheumatic conditions as in nodules. It was possible that the latter were not rheumatic.

LARYNGOLOGY AND OTOLOGY.

Almost the entire contingent of British laryngologists and otologists *en route* for Toronto met in Montreal on Saturday, August 18th. On the following morning they were conducted over the Victoria Hospital by Dr. H. S. Birkett, who has charge of the throat and ear department. The lavish equipment of the building and the facilities for teaching evoked general admiration. By the kindness of Dr. and Mrs. Birkett the members were entertained to luncheon in the Hunt Club and afterwards were shown places of interest in and around Montreal. In the evening a number of the Canadian laryngologists dined with their British

confrères in the Windsor Hotel. The first opportunity in Toronto afforded to the members and guests of the section of renewing old friendships and making fresh ones was at the successful and largely attended At Home given by Dr. and and Mrs. Gibb Wishart on the Monday evening.

TUESDAY, AUGUST 21ST.

At the opening meeting of the section the PRESIDENT (Dr. J. DUNDAS GRANT, London) made a few introductory remarks, in the course of which he expressed regret that only a comparatively small proportion of the programme was devoted to otology proper. He trusted that the dazzling brilliancy of the results of modern surgical otology might not be allowed to divert their gaze from the minute details of intra-aural technique. The former were answerable for the saving of many lives from danger, but the latter enabled them often to prevent their patients from running into those dangers. Let them remember that the ear was primarily an organ of hearing and cultivate the accuracy and patience in examination and dexterity and delicacy of manipulation upon which their success in relieving their patients and in making their own reputation so much depended.

Discussion on Operations for the Correction of Deviations of the Nasal Septum.

The opening paper was read by Dr. STCLAIR THOMSON (London). The majority of septal deviations, he said, were compounded of deflections and outgrowths of both cartilage and bone. In many cases both nostrils were more or less obstructed. Until recently he knew of no method which could deal with such cases satisfactorily. To produce a large perforation in the septum always appeared to him both inartistic, unsurgical, and in many cases ineffectual, for the obstruction not infrequently ran so far back as to be beyond it. The President had expressed the opinion that it was most undesirable to produce a perforation. To shave off the crest of these deviations seldom left any tangible patency, while those rhinologists who talked of "simply pushing the weakened septum into the median line" could only be admired for their faith in the malleability of the septum, while they were to be congratulated on the tolerance of their patients who would bear the necessary renewal of packings or splints for three weeks afterwards. The rough, unsurgical, and ineffectual use of Adams's forceps and such-like barbarous contrivances, already belonged to the past history of rhinology. For his own part the deviations most requiring treatment had been formerly just those in regard to which he felt most powerless. In some cases he avoided operation on the septum by removing part of the turbinals but in many he felt compelled to advise the patient to tolerate the nasal stenosis as he knew of no satisfactory method of correcting it. A few years ago he would only operate on half a dozen septa in a session, when now he felt justified in operating on 40 or 50. This confidence was begotten of the adoption of the method of excising septal obstructions by the submucous method and he took it that the debate would be largely concerned in discussing the methods, difficulties, advantages, and objections of this operation, while considering simpler measures which might sometimes be used instead of it. His own technique had recently been described in detail in THE LANCET.[1] The first case of this operation shown at the Laryngological Society of London was presented by him on May 6th, 1904. The objections which might be raised would call for discussion. The chief were: (1) the difficulties of the technique; (2) the anæsthesia; (3) hæmorrhage; (4) stitches; (5) the possibility of collapse of the bridge of the nose; (6) danger from subsequent blows on the nose; and (7) unsuitability for children. The technical difficulties disappeared with practice and patience. Hæmorrhage had never given him trouble and he was surprised to read of surgeons who referred to it and the frequent mopping required during the operation. The method of anæsthesia described rendered the operation painless until they came to the removal of bone, which was disagreeable. He had tried and had abandoned the submucous injection of cocaine and adrenalin. His first cases were done under chloroform and he had recently reverted to it for nervous patients requiring an extensive operation. The stitches expedited healing. No collapse had occurred in any of his patients and Freer's experience showed that there was no added risk from subsequent blows on the nose. Under 16 to 18 years of age there was increased difficulty in operating in narrow noses and at an earlier age there was the possibility that it would hinder complete development and the risk of the deviation re-forming if not completely removed. But other surgeons would doubtless give them their experience on these points. The more actual objections which occurred to him were the following: (1) incompleteness of operation; (2) flapping septum; and (3) previous operations. It was the incomplete operation which caused the flapping condition of the septum in which during quick inspiration the fleshy septum was sucked against the outer wall of the narrower side, thus leaving the patient with only one free nostril. If the operation were carried out perfectly both sides would be equally free and the septum, though flaccid, would remain vertical. Previous treatment rendered the operation more difficult; the mucosa might be changed into scar tissue adhering closely to the septum or the two mucous membranes might be united together and the task of separating them became most difficult. The advantages of this operation might be summarised as follows: (1) no general anæsthetic was required; (2) there was no hæmorrhage; (3) the absence of pain and shock; (4) there was no reaction (the post-operative temperature seldom rose above 99° F.); (5) the absence of sepsis with its possible extension to the ear, the sinuses, or the cranial cavity; (6) no splints were required and no plugs after 48 hours; (7) rapid healing, without crust formation; (8) no risk of troublesome adhesions; (9) short after-treatment; (10) speedy establishment of nasal respiration; (11) suitability for all deformities of cartilage or bone in the septum which required treatment; (12) the space gained was not only that which resulted from a vertical septum but the extra room secured by the removal of the cartilage, which was sometimes one-eighth of an inch in thickness; (13) no ciliated epithelium was sacrificed; (14) accuracy of result could be depended on and the prognosis was therefore the more definite; and (15) the improved appearance of the nose externally. He did not wish to magnify their office but it was wrong both to their patients and themselves to minimise, by adopting a half-measure, an operation which with skill and patience could result in so much permanent benefit to those who required it.

Dr. JOHN O. ROE (Rochester, New York) read a paper in the course of which he stated that the operations required for the correction of the nasal septum might be divided into those necessary for the putting in proper condition of the nasal passages and those for the straightening of the septum itself. Having taken into consideration the associated abnormalities in the nose it was also necessary to give attention to such conditions as had contributed to cause or were active in maintaining the deviation. It was also important to remove such conditions as would cause either nasal passage to be obstructed when the septum was placed in the middle line. On undertaking the main operation it was especially important carefully to select the operation best suited to the form and conditions of the deflection and the associated conditions of the nasal passages. If there were a marked thickening of the septum the submucous resection was especially called for. In other cases if the set or lower attachment of the septum was at one side of the median line and otherwise generally straight the Watson or Gleason operation was especially adapted. If the deflection were confined to the cartilaginous portion the Asch operation might in some cases be of special service, whereas if the osseous or the osseo-cartilaginous portion were deviated the Roe operation, by the use of fenestrated comminuting forceps, was the one to be selected. No one operation was adequate to all conditions in all cases but each was adapted to a certain variety, and therefore one operation was often a supplement to others. The one operation which would be found more often to meet the requirements of different cases, or to supplement other operations, was the Roe method of fracturing the septum by comminuting forceps. Deviations of the septum, as first and best classified by Jarvis, might be divided into osseous, osseo-cartilaginous, and cartilaginous. The most frequent form was the osseo-cartilaginous occurring in about 60 per cent., while deviations of the cartilaginous portion alone did not exceed 30 per cent. Therefore, other things being equal, the form of operation best adapted for the correction of deviations of the osseo-cartilaginous portion should be twice as often called for as those adapted for the correction of the cartilaginous portion alone. In nearly all instances the bend in the septum found in the osseo-cartilaginous cases took place at or just behind the osseo-cartilaginous junction or

[1] THE LANCET, June 30th, 1906, p. 1810.

articulation; consequently, in order to overcome all resistance it was necessary to fracture this portion of the septum so as to change the direction of that portion of the septum below this point. This operation, therefore, was of special service in correcting deflections of the osseo-cartilaginous portion and in those cases in which the general direction of the septum at this point required changing and was therefore a valuable supplement to other operations. It also became a valuable adjunct to the submucous resection operation where there was no marked thickening of this portion of the septum which rendered it unnecessary to resect the osseous portion when it could be so easily and quickly fractured and placed in the median line. In dealing with those cases of marked local thickening of the septum a favourite method of his was the submucous removal of a sufficient amount of this thickened portion to reduce the septum to its normal thinness. In thin septa the tearing of the perichondrium or periosteum was liable to take place and the vitality of the membrane was so seriously impaired thereby that perforations resulted. It was important to refrain from the performance of submucous resection in those cases in which the lower portion of the nose was undeveloped and already inclined to flatten, also in children.

The next paper was read by Dr. GEORGE R. MCDONAGH (Toronto) who thought that it would be generally admitted that the operation which had been most lately introduced—namely, submucous resection—deserved the foremost and fullest consideration. In suitably selected cases no other operation had in his hands produced nearly such good results. In the first place, however, he would urge the importance of giving such attention as might be required to other causes of obstruction before undertaking what might be considered as a rather serious operation. He also referred to conditions in which simpler operations would suffice. The special class of cases to which submucous resection was particularly adapted was that in which there was deflection without much or any thickening of the cartilage. He could not, however, bring himself to believe that such very complete excisions as removal of the whole of the vomer, cartilage and perpendicular plate, could often be necessary and it might be that the enthusiasm for thorough operations on the septum had caused the pendulum to swing beyond a judicious limit. As to technique, writers differed more in detail than in principle and each operator would adopt such modifications as might seem to him most convenient in carrying out his ideas. Of objections to the operation noted by him, the first was the difficulty of performance—this, however, could be overcome; the second was the danger of the falling in of the bridge, but ordinarily this did not take place; and the third was the danger of perforation of the septum which was not great, certainly not of a large one, and small ones did no more than sentimental harm. The introduction of horsehair sutures was, he thought, a decided advantage. As to the dressing, he had found that a strip of thin rubber sheeting or oiled silk placed over the septal mucous membrane before the gauze packing was introduced greatly facilitated its removal. Cocaine gave practically complete anæsthesia. He had found the sitting position tend so much to syncope that he had adopted by preference the horizontal position with the head fairly high; the inconvenience to the operator was only slightly increased. In children, unless very necessary, the operation should be postponed until more nearly full development of the nasal framework had taken place. In conclusion, he thought that a patient was better in possession of the natural bony and cartilaginous supports of his septum, and if any plan could be devised short of removing these supports, or if any simpler or less radical operation would suffice, that should be adopted.

Dr. OTTO T. FREER (Chicago) said in the course of a paper read by him that the chief cause why the submucous resection had not displaced all other procedures was the fact that so far it did not represent a uniform standard operation but was a conglomeration of more or less suitable methods differing widely in their mode of performance and having in common only their recognition of the correctness of the principle of exsecting the deflected cartilage and bone. An experience of 178 submucous resections had shown him that, if rightly performed, this operation might be relied on with absolute certainty to remove any deflection, no matter how extreme, with less injury, suffering, and after-treatment than any other method. For a novice the complete operation was a hard task and might prove long and exhausting. The spirit of the method was that of patient, painstaking deftness, not of hurry. As the patient did not suffer there was no reason why the surgeon should stint his time. For local anæsthesia he employed pure cocaine, rubbing it, in the form of flake crystals, into the mucosa with a little moist swab, always preceding it with 1 in 1000 adrenalin. Objections had been raised against operating upon children before the fifteenth year. During five years, in which he had resected the deflections of 32 children between the ages of seven and 15 years and of 12 between the ages of seven and 11 years, he had seen no damage to the development of the children's noses. An undesirable effect of growth noticed in some younger children was a tendency to a partial reproduction of the deflection but never to any sinking of the nasal bridge. Children should therefore not be deprived of the benefits of the operation because of theoretical objections. He had not changed his reversed L and long vertical initial mucous membrane incisions which gave widest access to the difficult deeper parts of the deflection. The need of a thin-bladed sharp elevator and of other round-edged knife-blades for dissection did not yet seem to be appreciated by many. He still cut out the denuded cartilage with his three little cartilage knives and had never felt the need of the swivel-knife. The large perforations reported as due to its use were an evidence of its uncontrollability. There was much difference of opinion as to the best manner of removing the superior maxillary crest. He had never had any difficulty in clearly and painlessly doing this with his forceps. After extensive resections there was often swelling of the redundant mucous membrane over what was previously the concavity of the deflection which might cause partial obstruction for a few weeks. In conclusion, he called attention to a form of superficial inflammation with epithelial desquamation and consequent prolonged scabbing occasionally seen in the naris of the former convexity and especially liable to occur in adult patients who had been subjected to previous sawing or fracturing operations. The condition was remedied by keeping the operated side closed with cotton-wool for some weeks and cleansing with a mild alkaline spray. On beginning to use the nostril for breathing lanolin with 2 per cent. salicylic acid was applied to prevent the adherence of crusts. In some weeks all scabbing ceased.

Dr. WILLIAM L. BALLENGER (Chicago) said that in about 90 per cent. of the cases of deflected septum the submucous resection best overcame the obstruction. The chief modification introduced by him was the swivel-knife for the removal of the cartilaginous portion of the deviation.

Dr. HERBERT TILLEY (London) was convinced, from an experience of over 80 cases of submucous resection, that the thorough removal of the incisor crest was a most important part of the operation. As a matter of routine he removed the anterior half of the inferior turbinate on the side opposite to the deviation. In children he generally delayed operation until about puberty. Only one long sterilised strip should be used in packing. With practice the operation could be carried out in from 15 to 20 minutes. He preferred a general anæsthetic.

Dr. CHEVALIER JACKSON (Pittsburg) thought submucous resection so satisfactory that there was a temptation to do it when an operation other than septal was called for. He emphasised the importance of the turbinals as a factor in the failure of operations on the septum and in the causation of the deformity itself. Intra-nasal surgery should be carried out in an operating-room and not in an office.

Dr. HENRY SMURTHWAITE (Newcastle-on-Tyne) followed the application of cocaine and adrenalin by an injection of beta-eucaine 2 per cent. The patient was seated upright but could be immediately lowered into the horizontal position on showing signs of faintness. In all his cases he had made the horizontal and vertical incisions and had used stitches.

Dr. J. PRICE BROWN (Toronto) recommended that when there was merely curvature of the cartilaginous septum two parallel horizontal incisions should be made with a connecting cross cut and that the parts should then be pressed into the median position and kept there by means of a rubber splint until healing had taken place.

Dr. M. C. SMITH (Lynn, Massachusetts) spoke from the dentist's standpoint. In children under 15 years of age a deviated septum and enlarged inferior turbinates were nearly always associated with a narrow V-shaped arch and high palate. The widening of the jaw could be effected by a properly applied rubber plate and as a consequence

the inferior turbinates would be drawn away from the septum and the latter pulled materially downwards.

Dr. J. A. STUCKY (Lexington, Kentucky) uttered a warning against too great enthusiasm for submucous resection. In the majority of cases of septal deviation the removal of the anterior third of the middle turbinate assisted ventilation and drainage of the upper parts of the nose. For anæsthesia and hæmostasis he recommended a solution containing sodium chloride, five grains; cocaine hydrochlorate, 20 grains; antipyrin, 20 grains; adrenalin solution, two drachms; and water to six ounces.

Dr. H. P. MOSHER (Boston) expected still to use the Gleason operation for hospital work owing to the time required for submucous resection; the latter, however, was the method of choice in private practice. Cargill membrane was better than rubber tissue for preventing adhesions.

Dr. WENDELL C. PHILLIPS (New York) maintained that the guide in deciding as to operation should be symptoms and not the mere presence of a deflection or spur.

Dr. C. G. COAKLEY (New York) had seen straightening of the deflected septum and increased patency of the nasal passages in children with high palates follow the widening of the arch by means of dental splints. The packing should keep the septum in the median plane; too much on one side resulted in a continued deviation, while too little was liable to be followed by the development of a hæmatoma between the layers.

Dr. W. E. CASSELBERRY (Chicago) gave Dr. Freer the credit of originating in America submucous resection of the nasal septum. This operation was, however, not to be preferred in all cases—e.g., in septal deflection with external lateral deformity fracturing operations were more successful, and in young children the Watson-Gleason method was adequate and rapid. To avoid the fragmental dissection of bone far back he sometimes separated the muco-perichondrium on the concave side and then sawed off the projecting bony convexity.

Dr. P. WATSON WILLIAMS (Bristol) had found it advantageous to make a small primary puncture on the concave side well forward in order to avoid perforating while cutting through the cartilage. Through this a long narrow muco-periosteal elevator was introduced by means of which the cartilage was bared in the region where later it would be incised from the convex side.

The PRESIDENT considered that the discussion showed that there was room for judicious eclecticism in the choice of operation. He usually practised Killian's method but in cases of deflection with a sharp vertical ridge he preferred Freer's L incision. As a rule, he operated on the convex side but when the triangular cartilage was dislocated into one nostril he operated on this side; also, when there was extreme enlargement of the maxillary crest he sometimes selected this side and extended his incision across the floor of the nose so as to allow of the detachment of the muco-periosteum from below upwards.

Dr. STCLAIR THOMSON and Dr. FREER replied.

Mr. HUGH E. JONES (Liverpool) and Mr. C. THURSTAN HOLLAND (Liverpool) gave a demonstration of

An Exostosis of the Frontal Sinus

and showed a skiagram of the same. The patient, a woman, aged 35 years, had consulted Mr. Jones because of severe pain, obstruction of the right nostril, and protrusion of the right eyeball. The radiogram which was taken with the woman lying face downwards and the plate beneath her face, gave valuable information as to the position and extent of the exostosis. The growth was removed; it measured two and a half by one and a quarter inches.

Dr. MOSHER gave a demonstration of

A Series of Sphenoidal Sinuses,

showing a partial partition on the outer wall. The spur might interfere with drainage and so become of clinical importance.

Dr. SMURTHWAITE read a paper on

Headache: Pathological Conditions of the Middle Turbinal a Causal Factor.

When the bony conformation of the middle turbinal caused it to be close to, or in contact with, the septum a slight degree of turgescence or hypertrophy of the mucous membrane of the opposing surfaces would give rise to pressure. This in some patients was accompanied by one or more of the following symptoms: tightness across the bridge of the nose, a feeling of pressure above the eyes, and pain radiating from the inner canthus and side of the nose towards the intra-orbital or supra-orbital canal, round the eye causing lacrymation or passing up over the forehead and scalp to the occiput. If the nervous supply of the nose were considered it was evident that pressure on the middle turbinal or septum might by transference give rise to pain in other regions supplied by the first and second divisions of the fifth nerve. Several cases were referred to in which relief from symptoms such as those mentioned was obtained by removal of the anterior end of the middle turbinate. It was to this particular region of the nose that Dr. Smurthwaite desired to direct attention as the seat of origin of nasal headaches.

A paper was read by Dr. PERRY G. GOLDSMITH (Belleville, Ontario) on

Some Unusual Cases of Frontal Sinus Suppuration.

The following were the cases detailed. Case 1.—A patient, aged 21 years, complained of post-nasal discharge. Catarrh settled in and about the eye and was accompanied by marked frontal pain. There was enlargement of the anterior end of the middle turbinate and a few polypi bathed in pus were present in the middle meatus. The anterior end of the middle turbinal was removed as a preliminary operation. A few days later the patient informed Dr. Goldsmith that her complaint had been entirely cured but that there was now a disgusting discharge from the nose which she had never had before the operation. The antrum and frontal sinus were both irrigated from the nose for several weeks, when the discharge ceased. Case 2.—A patient, aged 33 years, complained of supra-orbital neuralgia and nasal discharge. Morphine had been given in large doses but without relief. The floor of the left frontal sinus was exceedingly tender but not bulging. This cavity and the left antrum were operated upon and the patient was much better for the next two days. On the third day the temperature rose to 104° F. and was accompanied by marked distress in the head. The packing was removed, which allowed of a free flow of pus and gave immediate ease. Pus was now found to come through a very small opening which led towards the junction of the front part of the forehead and the scalp. Subsequently a large cavity was laid open in this situation. Healing had almost taken place when reinfection occurred due to an acute exacerbation of the disease in the other sinus, a small perforation being present in the septum. The other sinus was then operated upon and both healed promptly. To correct the disfigurement over the sinus first opened a large flap consisting of the entire scar and tissues over the bone was dissected up, the depression was plastered with solid paraffin, and the flap was sutured in place. The cosmetic result was excellent. Case 3.—A patient, aged 64 years, had undergone radical operation on all the sinuses. Twelve hours after the operation on the frontal sinus a severe attack of facial erysipelas set in which infected the antrum, the pharynx, and the larynx, but not the unpacked frontal sinus. Ultimately the patient did fairly well. Case 4.—The patient had frontal sinusitis, orbital phlegmon, and displacement of the eyeball downwards and outwards due to a primary sarcoma in the right nasal fossa. The only complaint was diplopia. The pus in the orbit was evacuated and a large mass of sarcomatous material was removed. The patient was quite comfortable afterwards but died within a year from secondary involvement of the liver. Case 5.—A man, aged 41 years, complained of having caught a very severe cold in the head which caused distress in one of his eyes. Apparently he was suffering from a severe attack of conjunctivitis with iritis. The nasal septum was found to be deflected and on pushing it aside an enlarged middle turbinal was seen to press against the septum. On probing the fronto-nasal duct a small stream of muco-pus escaped. The patient obtained immediate relief and by using menthol inhalations was rapidly well. The ocular condition subsided without further treatment. Concluding, Dr. Goldsmith said that felt burrs of various sizes attached to a dental engine had facilitated greatly the clearing of cavities of their diseased membranes and had assisted in checking hæmorrhage.

Dr. HERBERT TILLEY read a paper on

Some Considerations upon Certain Factors in the Diagnosis and Treatment of Suppurative Lesions in the Nasal Cavities.

With regard to the etiology of suppuration in the maxillary antrum suppuration in that cavity was, he said, due to intra-nasal or dental infection. It was important to determine which was to blame, for the prognosis and treatment in

cases of dental origin were much more favourable. Points of distinction between these two classes of cases were the more frequent presence of hypertrophy of the uncinate process and of polypi in cases in which the sinus had been infected from the nose; when a diseased tooth was the cause of trouble aching in it would often be produced by syringing the antrum. In the matter of diagnosis puncture was most trustworthy but on three occasions there was no return of the injected fluid owing to the valve-like actions of intra-polypi. Pus from the antrum might be situated high anteriorly in the middle meatus owing to a deviation of the septum pressing against the posterior half of the middle turbinate or the presence of a large polypus in the posterior part of the meatus. Alveolar drainage was more likely to be effectual in cases of dental origin when of short duration. Some form of radical operation would be required for the majority of chronic cases of whatever origin and was practically always called for if polypi were present in the middle meatus. He (Dr. Tilley) practised the Caldwell-Luc operation with the following modifications: (1) removal of the whole inner wall and curetting of the lower anterior ethmoidal cells; (2) removal of only as much of the mucous membrane as was diseased; (3) closure of the bucco-antral wound; (4) no packing; and (5) syringing the nasal cavities. The ethmoidal cells were rarely the seat of suppuration except in association with a similar condition in the neighbouring sinuses. When the symptoms pointed to suppuration of the frontal sinus the presence or absence of pus could generally be determined by reclusion. In acute suppuration irrigation would hasten cure. In chronic cases it might also be successful if the contour of the sinus were fairly regular and the opening into the nose unobstructed. Pain over the sinus was no proof that disease was located there. The best results in Dr. Tilley's hands had been secured by a simplification of Killian's operation. The details were the same as his with the exception that the floor of the sinus was not removed. The diseased ethmoidal cells were thoroughly curetted through the opening below the bridge of bone and the wound was sutured at the close of the operation. The after-treatment consisted in daily irrigation of the sinus through the nose by way of the large communication made at the time of operation. Osteomyelitis of the frontal bone had been due, in Dr. Tilley's opinion, to the neglect to remove the fronto-ethmoidal and ethmoidal cells at the time of operation, so that the higher sinus had been re-infected and the pus thus retained under tension had invaded the diploë of the frontal bone. Since giving special care to the removal of the ethmoidal cells he had had no cause to fear osteomyelitis. As regarded the sphenoidal sinus in three cases deep-seated pain in an ear which was otherwise normal had been a very definite symptom. Irrigation of the sinus or instillation of a few drops of peroxide of hydrogen would sometimes induce the same symptom. The pulsation of pus in the neighbourhood of the ostium sphenoidale was pathognomonic of suppuration in the sinus. In operating, always more of the wall than seemed necessary at the time of operation should be removed, because of the tendency of the opening to contract. Free drainage was the desideratum. Curetting the interior was not necessary and might be dangerous.

Dr. FREER spoke in defence of the intranasal operation of removal of a large portion of the inner wall of the antrum of Highmore for relief of its chronic suppuration. He had had six consecutive cases of chronic empyema of the antrum with complete recovery in from three to four weeks simply as a result of the free drainage and ventilation of the cavity thus obtained.

Dr. COAKLEY said that pain in the teeth was almost always complained of while irrigating an acutely inflamed antrum independently of the state of the teeth. He had not removed the floor of the frontal sinus in his latest operations and thereby had saved time during the operation and had not delayed healing. Pain referred to the ear had been common in his cases of acute sphenoiditis.

Dr. F. FLETCHER INGALS (Chicago) thought that the frontal sinus could be explored by the probe in 90 per cent. of all cases. When this was possible a free drainage canal could be safely established by the pilot burr which he had recommended. He believed that this operation was as safe as any other on the frontal sinus.

Dr. MOSHER had obtained most satisfactory results from Killian's operation in frontal sinus disease. The chief objection to it was the possible deformity. To avoid this they should leave as broad a strip of bone as possible above the rim of the orbit, and the long axis of the opening that was made in the anterior wall should be horizontal and parallel to the orbital margin, not vertical or obliquely vertical.

Dr. WATSON WILLIAMS emphasised the undesirability of removing normal structures in order to investigate the condition of the sphenoidal sinus. If its ostium could not be inspected he punctured the lower part of the anterior wall with his sphenoidal sinus-cutting forceps. This procedure was free from risk. In antral suppuration the disease was nearly always limited to the inner wall so that removal of this was often sufficient to effect a cure.

Dr. STCLAIR THOMSON found last year in Paris that the Caldwell-Luc operation was in many cases giving place to puncture and repeated irrigation. He had no hesitation in doing a submucous resection in the presence of acute or chronic sinusitis. In reference to earache he would shortly publish a paper showing how misleading this symptom was in sphenoidal disease.

Dr. A. LOGAN TURNER (Edinburgh) endorsed the view that when performing a radical operation upon the maxillary sinus the cavity should be opened through the canine fossa, for it was only thus that thorough visual exploration was possible.

Dr. GEORGE L. RICHARDS (Fall River, Massachusetts) was of opinion that the large majority of cases of antral suppuration could be treated by puncture through the naso-antral wall. If a large enough opening were made the drainage would be good and many patients could be taught to wash out the sinus through a curved cannula. The question of cure by the intranasal route depended not so much on the duration of the purulent process as on the character of the antral mucosa.

The PRESIDENT was in favour of the treatment of rhinological conditions by rhinological methods but the principle should not be pushed too far. More than once he had wished that he had operated more radically but he was sure that he had in many instances been able by intranasal methods to obviate the necessity for external operations. He exhibited curved bougies for the dilatation of the infundibulum which, combined with the use of Sondermann's suction apparatus, had proved of value in the treatment of frontal sinusitis.

Dr. GOLDSMITH, in reply, said that the method of exclusion referred to by Dr. Tilley might fail in those cases in which the frontal sinus had emptied itself shortly before examination. They should be sure that sinus disease did not demand attention before they did any major operation on the septum.

Dr. HANAU W. LOEB (St. Louis) read a paper on

A Study of the Anatomy of the Accessory Sinuses of the Nose, based upon Reconstructions of Two Heads.

Reference was made to the method of reconstruction as outlined in a paper read by Dr. Loeb before the American Laryngological, Rhinological, and Otological Society at one of its meetings in June, 1906, by means of which it was possible to reproduce the sinuses in their proper relations, giving an anterior, lateral, and superior view. This made it possible to compare the various sinuses with each other and with those of other heads. The two heads studied were those of two men, one white and the other black, of about the same height, age, and weight. The very great differences which existed between the sinuses themselves and the corresponding ones of the two heads were clearly shown in the reconstructions. In this way only could exact measurements of individual sinuses be ascertained. While no definite conclusion could be drawn from a study of only two heads it was clear that the method furnished the means of more closely studying the sinuses and suggested the likelihood of greater understanding of the varieties, relations, and functions of the sinuses and the causes which led to their irregular distribution. Serial sections of each head were exhibited with drawings from the sections and reconstructions in various planes, showing relations and comparisons of the sinuses.

Dr. COAKLEY, in a paper on

Skiagraphy as an Aid in the Diagnosis and Treatment of Diseases of the Accessory Sinuses of the Nose,

said that at his request Dr. E. W. Caldwell had skiagraphed about 200 patients suffering from sinus disease. In 46 of these the frontal sinuses were operated upon so that the size and shape of the sinuses could be compared with those conditions as shown in the skiagraphs. It was not very difficult to obtain a plate that would show the presence or absence of

the frontal sinuses, their size, and the subsidiary septa. Such plates might suffice to determine beforehand the type of operation best suited for the patient. Dr. Coakley was convinced that an excellent skiagraph could be depended upon to demonstrate even the presence or absence of disease. In a good skiagraph a dark, slightly curved area, almost parallel with the upper border of the orbital arch, had been found to correspond to a recess extending backwards over the roof of the orbit. When a frontal sinus was diseased there were invariably a cloudiness over its site and an indistinctness of its outlines as compared with the healthy sinus. The width of the ethmoidal cell area was easily demonstrated. A side view of the sphenoidal sinus often gave information as to whether the cavity was large or small.

Dr. J. PRICE-BROWN showed a case of Nasal Sarcoma with pathological specimens removed three years ago.

DERMATOLOGY.

WEDNESDAY, AUGUST 22ND.

THE PRESIDENT (Dr NORMAN WALKER, Edinburgh), in his opening remarks, after thanking the profession in Canada for the honour of being asked to preside and welcoming the visitors, took for his subject

The Place and Position of Dermatology in the Medical Curriculum.

He spoke of certain advantages which the student of the old times had when there was no separation of skin diseases into a department and he was constantly coming across cases all through his course. Now with the modern system of organisation the subject was perhaps better taught though compressed into too short a space. Whilst thinking that systematic lectures had been in the past, and in some subjects still were, overdone, nevertheless he considered that they had their advantages. In the necessary bustle of an out-patients clinique a large number of useful scraps of information might be gleaned but 10 or 12 systematic lectures would enable the student to profit much more from clinical instruction afterwards. As to the period in the curriculum in which a student should be taught dermatology he believed that in the five years' course the fifth summer was the best time. The subject should so occupy a regular place in the curriculum but as to whether it should form part of the degree examination he thought that the Edinburgh system of certificates would suffice. On the question as to what the student should be taught, he was of opinion that the commoner diseases should have prominence, whilst the rarer cases might be dealt with as they turned up. In addition to lectures the "quiz" classes of the Americans were very profitable to the student.

Dr. J. C. JOHNSTON (New York) said that he would have liked more information as to the subjects to be taught and the time to be allotted to dermatology. His opinion was that what the student remembered was what he had learnt face to face with his instructor and that he should be thoroughly "quizzed."

Dr. GILCHRIST (Baltimore) insisted on training the student to use his own reasoning powers in the diagnosis of skin conditions. The exercise of common-sense on his part should be encouraged.

Dr. G. H. FOX (New York) mentioned the advisability of teaching clinical diagnosis and leaving dermatological therapeutics to be acquired by the student at a later period. He laid stress upon the cultivation of the student's power of observation and claimed that only by the active use of his eyes in noting clinical peculiarities of common skin diseases, in place of listening passively to what his instructor had to say, could the student become expert in diagnosis.

Professor JAMES NIVEN HYDE (Chicago) read a paper on

The Influence of Light-Hunger in the Production of Psoriasis.

After speaking of the accumulation of facts, he referred to the statistical frequency as shown in the reports of the American Dermatological Association from the year 1878, when the first return was made, to the year 1903. These reports showed 465,063 cases of diseases of the skin, among which were tabulated 13,979 cases of psoriasis, showing a proportion of about 3 per cent. The percentage of the last seven years ranged pretty regularly from 2·480 to 3·135, showing that the number of persons suffering from psoriasis was on an average nearly the same from year to year. The cities represented in these returns were Boston, Chicago, Montreal, Cleveland, Buffalo, and Detroit among the cities of the north, and New York, Brooklyn, Philadelphia, Baltimore, Washington, St. Louis, Atlanta, Cincinnati, and New Orleans in the nearer south. Of course, these figures did not represent the exact number of persons suffering from psoriasis in the towns named, but only cases falling under the care of experts, where diagnosis was assured and the record trustworthy. After referring to the situation of the lesions and age of incidence, he spoke of the etiology and put down five propositions for discussion.

1. Psoriasis is a disease that never affects the lower animals, whether these be feral or in a state of domestication, for the reason that the integument of such animals is very rarely screened from the light by artificial covering. 2. If psoriasis in man be an expression of resentment on the part of the skin against the partial or total exclusion of light from its artificially covered surfaces, it is clear that the number of persons whose skin is thus abnormally sensitive is relatively small. 3. If psoriasis be a resultant of light-hunger in the skin of certain abnormally sensitive subjects, because of the greater or less degree of exclusion of light resulting from artificial covering of the body, the disorder should be most prevalent and most severe at those seasons of the year and in those countries in which sunlight is least abundant. 4. If psoriasis be a resultant of light-hunger in the skin of certain abnormally sensitive subjects, because of the total or partial exclusion of light from the protected portions of the body, the localisation of the disease in the integument should be largely determined in the regions of such exclusion. 5. If psoriasis be a resultant of light-hunger on the part of the skin of certain individuals, because of the greater or less degree of exclusion of light from the covered portions of the body, the effective treatment of the disease should be by illumination of the regions chiefly involved.

Dr. DUHRING did not agree with Professor Hyde as to the cause. He spoke of the importance of internal treatment and discouraged the use of the x rays. In opposing a local cause he said that if there was one disease that was not parasitic it was psoriasis.

Dr. L. D. BULKLEY (New York) thought that the eruption was due to metabolic causes; the skin parasites might play a part if the soil was suitable. He believed in prolonged internal treatment as in the case of syphilis. He had seen the lesions disappear under the internal use of large doses of nitric acid. He did not agree as to light-hunger being a cause.

Dr. ROSS (Halifax) had had seven cases in hospital at the same time of psoriasis in coal miners; they had not had the condition before taking up that work.

Dr. FOX called attention to the freedom of the negro. He had photographed very many dermatoses but never yet had he obtained a photograph of a marked psoriasis in the negro.

Dr. CORLETT (Cleveland) had never seen a case of psoriasis in the negro as an exciting, as distinguished from a predisposing, cause. He believed that light-hunger and local irritation took part, and thought that sunlight caused the eruption to disappear. He had not had marked effects from internal treatment.

Dr. A. R. ROBINSON (New York) thought that any external agent, toxic or traumatic, might cause psoriasis in a predisposed person.

Dr. GILCHRIST believed that the parasitic theory had not been disposed of. The newer discoveries of the spirochætæ and the ultra-microscopic organisms opened up new fields for research.

The PRESIDENT having remarked on the diversity of opinion on the subject,

Professor HYDE, in reply, said that he would have been very much surprised if his paper had not brought out marked differences in the views held by dermatologists on the subject.

Dr. JOHNSTON read a paper on

The Evidence in Favour of an Autotoxic Factor in the Production of Bullous Eruptions.

He mentioned that the basis of all these cases was practically the same and that borderland cases were frequently met with. He did not believe in a tropho-neurotic origin but thought that the symptoms, first general toxic followed later by a secondary anæmia, bespoke an autotoxic origin. A careful investigation into the relative nitrogenous products of the urine was unproductive of result, as they remained fairly constant till suppression began. However, indican was invariably present in bullous eruptions and always indicated autotoxic disturbances. The associated eosinophilia also spoke for such a cause. The effects of treatment also indicated that toxins were concerned. It consisted in saline cathartics, water in large quantities, open-air exercise, the hot-air cabinet with the douche bath, pilocarpine (especially for pruriginous cases

when tar also did good), and the limitation of the proteid intake. His conclusions were that these conditions were autotoxic, they originated from proteid metabolism and they exercised a specific action on the vessel walls.

Dr. BULKLEY agreed with Dr. Johnston entirely on the question and mentioned that in years past he had seen numerous cases of erythema multiforme, often presenting many bullæ, amongst the immigrants. So frequent were they that they were often alluded to as morbus immigrantium. In them there had been disturbances due to ocean travel—constipation often for a week. In them the disturbance yielded at once to treatment directed to the liver and intestinal relief.

Dr. GILCHRIST thought that the question was one of deficient elimination.

Dr. DUHRING said that local treatment was only of use for the immediate relief of symptoms. He had seen good results from general treatment somewhat on the lines which Dr. Johnston had laid down. He mentioned the importance of the nervous system in these cases and the difficulty of investigating the rôle played by it.

Professor HYDE spoke of shock as a cause of dermatosis of this kind.

The PRESIDENT having spoken, Dr. JOHNSTON replied.

Professor J. A. FORDYCE (New York) gave a lantern demonstration of many interesting cases of skin diseases. The microphotographs were very fine.

THURSDAY, AUGUST 23RD.

A clinical demonstration was given by Dr. GRAHAM CHAMBERS of cases of Ringworm where epilation had been produced by the x rays. He gave two or three exposures of from 15 to 20 minutes. He had not as yet used Sabouraud's pastilles. The cases showed alopecia without any erythema. Cases of pityriasis rubra, molluscum fibrosum, &c., were also shown.—Some excellent photographs were shown by Professor HYDE, including some cases of Blastomycosis.—Dr. CORLETT'S photographs were also very much praised.

Dr. ROBINSON read a paper on

Some Errors in the Treatment of Cutaneous Cancer.

The treatment, in his opinion, should be different according to the size, situation, and variety of the lesions. Very small lesions ought to be excised. When situated near the eye or on the nose, where excision if it had to be wide of the mark left bad deformity, the x rays and caustics were to be employed. He advocated scraping in suitable cases and went into details on the treatment suitable to such cases. He pointed out that caustic potash was of diagnostic value in picking out malignant nodules and mentioned beneficial effects from thyroid extract.

In opening the discussion on Dr. Robinson's paper the PRESIDENT spoke of the poor results frequently associated with excision, saying that probably the surgeon was anxious to leave as much of the face as possible. He recommended chromic acid as a useful caustic and one not so painful as some of the other agents mentioned.

Dr. SHERWELL recommended the use of arsenic after operation, believing that it had an inhibitory effect on the cancerous diathesis.

Dr. FOX thought that the curette, or even better the dental burr, was of the greatest value preparatory to caustic or the x ray treatment.

Professor HYDE agreed in general with Dr. Robinson's methods. He had not seen any benefit from internal treatment.

Dr. BULKLEY stated that alcohol in any form was injurious in epithelioma. Diet should be absolutely vegetarian. Silver nitrate he believed to be harmful in its inefficiency.

Dr. CORLETT would like to add electrolysis as a method of dealing with these cases.

Dr. BREAKEY mentioned pyrogallic acid.

Dr. GILCHRIST thought that the x rays were of undoubted value.

Dr. ROBINSON replied.

Dr. R. W. TAYLOR (New York) read a paper on

The Evolution of Intraprimary Prodromal Syphilides.

He alluded to the general conception of latency in the evolution of syphilis. He mentioned cases of successive chancres and gave the history of several cases showing a slight traumatism became infected, causing prodromal lesions. He concluded that the whole organism was infected from the beginning and that the process was a rapid one diffused by the blood.

Professor HYDE, Dr. SHERWELL, and Dr. BULKLEY spoke.

Dr. GILCHRIST read clinical notes on a case of

Pityriasis Rubra

proceeding to gangrene of the extremities, a finger of the right hand and the whole of the left foot. The patient unfortunately left the hospital in the same chronic condition. She had been in hospital for some time and was in the same state when last seen. Examinations of the blood, urine, &c., all gave negative results as to any indication of the cause of the disease.

Professor HYDE spoke of weak solutions of carbolic acid leading to gangrene.

Dr. CORLETT read a paper on

Dermatitis Vegetans

and showed photographs illustrating a case. He discussed the nature and etiology of the affection.

Dr. WENDE (Buffalo) said that he had had several cases of this disease.

FRIDAY, AUGUST 24TH.

The proceedings were opened by a demonstration of cases, one of which was a case of pemphigus foliaceus of four years' duration. Another interesting case in a man, aged 49 years, was shown. The opinion generally held was that it was an example of pemphigus vegetans.

Dr. BULKLEY read a paper on

The Wrong and Right Use of Milk in the Treatment of Skin Diseases.

Milk he considered to be a natural food and should be suitable to all. Laboratory theories on the subject would probably require modification. He believed that milk was capable of absorption without preliminary caseation and digestion. Administration should be at the time of alkaline digestion and away from any time of other food ingestion. If given so it was beneficial in acne when otherwise it would not be well borne. Cases of eczema and urticaria were also improved by this diet.

Dr. DUHRING also spoke.

Dr. GRAHAM CHAMBERS introduced a discussion on

The Etiology of Eczema.

He reviewed the diversity of opinion on the subject and commented on its frequent association with asthma. He discussed the views of Dr. I. Walker Hall of Manchester on infantile eczema. Dr. Chambers considered it to be a disorder due to malnutrition.

The PRESIDENT laid stress upon the importance of external irritation as a cause, mentioning the dermatitis which some suffered from when exposed to primula obconica and other plants.

Dr. BULKLEY supported Dr. Chambers's view as to an internal cause.

Dr. DUHRING considered that the term "eczema" was used much too widely. He would distinguish eczema from dermatitis.

Dr. SHERWELL believed in the constitutional nature of the disorder.

Dr. GUTHRIE RANKIN (London) read a paper on

Blood Examinations as an Indication for Treatment in Certain Skin Affections.

He had used Wright's methods and considered that they gave clear and definite information as to the causes and treatment.

The PRESIDENT, Dr. GILCHRIST, and Dr. DUHRING having spoken on the subject, the proceedings of the Section terminated.

PEDIATRICS.

TUESDAY, AUGUST 21ST.

After some introductory remarks by the PRESIDENT, Dr. GEORGE ALEXANDER SUTHERLAND (London),

Dr. ROBERT W. LOVETT (Boston) read a paper on

Osteogenesis Imperfecta,

an essentially congenital condition characterised by the occurrence of multiple fractures during intra-uterine life or in infancy. The long bones were chiefly affected and as many as 113 fractures had been recorded in a newly born child in one case. When the first fracture appeared after the age of three or four years the total number of fractures experienced was not so great as when they commenced at an earlier age. The history of a case attended by Dr. Lovett

was given in which ten partial or complete fractures occurred up to the age of five months. The child died at the age of ten months from a general affection. Pathological examination showed very marked changes in the bones, the process of bone formation everywhere being checked and of an abnormal kind. The fibrous layer of periosteum was thicker than usual and instead of a continuous layer of normal bone the periosteum formed separate plates of non-laminated or imperfectly laminated dense bone in which were oval instead of stellate bone cells and large marrow spaces instead of Haversian canals. An interesting series of micro-photographs illustrating the pathological changes was exhibited.

Dr. HENRY ASHBY (Manchester) considered that Dr. Lovett's case was a noteworthy contribution to the subject of this disease. He did not think that this class of case was always fatal but that there was a class of apparently healthy infants whose bones fractured with very slight violence; the bones united readily and finally complete recovery occurred.

Dr. W. EWART (London) read a paper on

Abdominal Atony in Rickets.

As the medicinal treatment for this affection he recommended small doses of castor oil, to be given daily, and considerable doses of hypophosphites. He particularly advised the external application of massage, friction, and electricity and exhibited two elastic abdominal belts which he had devised and found most useful in treatment as they acted as a stimulus to respiration, supplied a hypogastric support, and tended to prevent gastric dilatation. The essential points of these belts were that the fabric was india-rubber and the usual elastic webbing was replaced by india-rubber cords.

The PRESIDENT said that he considered the abdominal atony to be secondary to gastric dilatation. He approved of the belt treatment as a respiratory stimulant and also agreed as to giving castor oil but did not approve of giving such large doses of hypophosphites.

Dr. EDMUND CAUTLEY (London) considered that the use of an abdominal belt would only aggravate the condition by lessening the activity of the abdominal muscles.

Dr. O. J. KAUFFMANN (Birmingham) recommended urotropin as an intestinal antiseptic in these cases.

Dr. EWART, in reply, protested against the tendency to condemn remedies *a priori* without trying them and once more urged a trial of elastic pressure by the abdominal belt.

Dr. ASHBY read a paper on

The Medical Aspect of Pneumococcal Infection.

He emphasised the importance of a suitable condition of soil for the implantation of the pneumococcus and considered that if the discovery of this organism had not yet led to any very practical results as regards serum treatment it had taught them the great value to individual patients of fresh air. This had been well exemplified by the success attending the treatment of measles and whooping-cough complicated by pneumonia in open-air shelters. He pointed out that the pneumococcus frequently gave rise to meningitis and described some typical cases of pneumococcal meningitis. He considered that a greater care of infant life, better nutrition, pure air, a levelling down of the slums, and a levelling up of the slum-mother would do more than aught else to lower the mortality from pneumococcal infection.

Dr. STUART MCDONALD (Edinburgh) spoke about the pathological aspect of pneumococcal infection and pointed out that the pneumococcus was the most potent disease-producing germ in children next to the tubercle bacillus. There was a greater tendency to general septicæmia from pneumococcal infection in children than in adults. Any important advance in treatment was likely to be found in the production of a vaccine and not of a curative serum.

Remarks were made by the PRESIDENT, Dr. JACOBI (New York), Dr. MACHELL (Toronto), Dr. BIER, and Dr. CAUTLEY. All deprecated excessive treatment in pneumonia and Dr. Jacobi pointed out that in his experience the prognosis of pneumococcal meningitis was not so severe as had been stated by some authorities.

WEDNESDAY, AUGUST 22ND.

Dr. C. L. STARR (Toronto) read a paper on

The Treatment of Tuberculous Abscess.

He reviewed the various methods of treatment of this affection: 1. The expectant method, the patient being put in the recumbent position and the affected limb firmly fixed. In favourable cases absorption might occur. 2. Aspiration, which he considered had the advantage of easy applicability but did not remove the focus of disease in the abscess wall. 3. Injection of germicidal agents which he mentioned only to condemn. 4. Excision of the entire sac as advocated by Watson Cheyne. This he considered an ideal method of treatment in the limited number of cases to which it was applicable. 5. Incision and drainage. He entered a hearty protest against this common method of treatment of this affection which was advocated in most text-books and even in recent works on orthopædic surgery and diseases of bones and joints. He considered that this treatment invariably resulted in sepsis and frequently endangered the life of the patient. 6. The method he adopted and recommended was that of incision, evacuation of the contents, curetting of the wall, and closure of the wound. He had presented a report of 25 cases treated by this method at the American Orthopædic Association in 1901, but it received a good deal of unfavourable criticism. He now reported 30 additional cases treated by this method which he considered gave better results than any other form of treatment. The abscess should be incised freely, the contents evacuated, the wall wiped with 10 per cent. iodoform gauze aided by the curette, the cavity cleaned as perfectly as possible, the wound closed with deep sutures, and firm pressure by antiseptic dressings applied. Swabbing the abscess cavity with pure carbolic acid and filling it with iodoform emulsion, as at first recommended, had now been discontinued.

Remarks were made by Dr. RIDDELL and Dr. RALPH VINCENT (London), the latter of whom thoroughly agreed in Dr. Starr's condemnation of the method of treating these abscesses by incision and drainage.

Dr. BLACKADER (Montreal) read a paper on

Rheumatism in Children.

He emphasised the fact that in childhood purely arthritic manifestations of rheumatism might frequently be wanting and might be replaced by such ailments as tonsillitis, chorea, pleurisy, muscular pain, exudative erythema, and epistaxis. According to the statistics of the investigating committee of the Association, tonsillitis was associated with rheumatism in 25 per cent. of all cases, while the records of the Vanderbilt Clinic of New York gave the proportion of cases of tonsillitis in rheumatism as 35 per cent. Recent inoculation experiments by Fritz Meyer in Germany and Frissell of New York pointed to the fact that the tonsils were the pathway for the entrance of the rheumatic organism. Hence careful attention to the condition of the tonsils was especially demanded in all children with a rheumatic tendency. All American authorities were agreed that subcutaneous fibrous nodules, so frequently observed in England in cases of rheumatism, were of rare development in America. With regard to treatment, Dr. Blackader laid chief stress on prophylaxis, correcting tendencies to anæmia, and avoiding over-fatigue. Rest in bed he considered most important. Frequent examinations of the cardiac area should be made, though in his experience severe cases of carditis were not so common in America as in England. He considered that the prognosis of rheumatic heart affections was better in children than in adults.

The following took part in the subsequent discussion: Dr. MCCRAE, Dr. DUKE, Dr. ASHBY, Dr. BAINES, Dr. KERLEY, Dr. HAND, Dr. LA FÉBRA, Dr. CAUTLEY, Dr. KAUFFMANN, and the PRESIDENT. There was a general consensus of opinion that subcutaneous fibrous nodules were not such frequent rheumatic manifestations in America as in England and also that their prognostic significance was not so grave as it used to be considered. The American speakers did not seem to depend so much on treatment by salicylates as we are accustomed to in Great Britain.

The last business of the day's proceedings was a discussion on

Congenital Laryngeal Stridor,

held conjointly with the Section of Laryngology. This was introduced by Dr. A. LOGAN TURNER (Edinburgh). After describing the symptoms of a typical case, he reviewed the various theories which have been advanced to account for the phenomena: (1) reflex laryngeal irritation produced by the presence of adenoids (Eustace Smith); (2) compression of the trachea by an enlarged thymus gland (Avellis); (3) congenital malformation of the upper aperture of the larynx (Lees, Sutherland and Lack, and others); and (4) an ill-coördinated spasmodic action of the respiratory muscles inducing an exaggeration of the normal infantile type of larynx

—an acquired deformity. This was the view which he himself held in common with Dr. John Thomson. They had together examined a number of larynges from stillborn infants and from children up to the tenth year of life, and showed by simple experiments that the malformation which had been regarded by some writers as a congenital one could really be produced by spasmodic inspiratory efforts acting on the soft collapsible structures of the infantile larynx. The crowing sound was produced mainly at the abnormally approximated ary-epiglottic folds. Dr. Logan Turner illustrated his subject by a series of interesting photographs thrown on a screen and by several stereoscopic views.

Dr. ASHBY described a case in which congenital laryngeal stridor was associated with an occipital meningocele. The child died at the age of nine weeks and at the post-mortem examination no adenoid overgrowths or enlargement of the thymus were found, and the larynx did not differ in any respect from that of an infant of the same age unaffected with stridor. He was inclined to the belief that in the cases of congenital stridor which he had watched the efficient cause was a neurosis, the result of a disturbed coördination.

Dr. CAUTLEY showed the larynx of a child who had suffered from laryngeal stridor. He did not believe that the condition was due to a neurosis but supported the view that it was due to a congenital malformation of the upper laryngeal orifice.

Dr. JACOBI said that they were too much given to building up theories on a single case and that in his opinion the condition was due to a variety of causes.

Dr. A. BROWN KELLY (Glasgow) said that the stridor was not due to vibration of the ary-epiglottic folds but to vibration of a flap of mucous membrane on the summit of each arytenoid.

Dr. SUTHERLAND supported the view that the condition was primary and congenital.

Dr. F. DUNDAS GRANT said he had only had a post-mortem examination in one case, when the stridor was caused by an elongated epiglottis drawn down over the larynx.

Remarks were also made by Dr. WISHART (Toronto), Professor INGALS, Dr. HUDSON MCEWEN, Dr. FORCHER (Charleston), and Dr. CHEVALIER JACKSON.

THURSDAY, AUGUST 23RD.

Dr. KESLEY (New York) introduced a discussion upon

Entero-colitis in Infants

by the reading of a paper on the Prevention of Acute Intestinal Diseases in Summer. In his opinion the chief etiological factors of the disease were climate and environment, a disordered gastro-intestinal tract, and improper food. He emphasised the importance of education in the prophylaxis of the disease. Mothers should be taught how to feed their infants before the hot weather came on, farmers should be educated as to the supreme importance of cleanliness in the dairy, medical men should be educated in the proper methods of infant dietary, and the consumers should be taught that pure milk could not be obtained in towns for less than 12 to 15 cents a quart. He considered that the mortality from infantile diarrhœa would continue until municipalities established milk depôts at a financial loss and appointed not visiting physicians or trained nurses but women who could instruct mothers how to feed and care for their children.

Dr. J. L. MORSE (Boston) followed with a paper on

The Dietetic Treatment of Entero-colitis.

He said that the object to be aimed at was such an arrangement of the food as would starve the bacteria without starving the body. At the commencement of the treatment food should be entirely stopped. Children could bear the withdrawal of food for from 24 to 72 hours or even for longer periods, provided they were given as much water as they would normally get in the food. If they would not take it by the mouth it should be given with a tube or per rectum, and if not retained by the stomach or intestine it should be administered subcutaneously in the form of normal saline solution. When food could be resumed by the mouth he gave either whey or pasteurised buttermilk, which might be strengthened by the addition of cream as the patient improved.

Dr. LA FÉTRA (New York), in discussing the medicinal aspect of treatment, laid stress in the first place on hygienic measures, especially proper clothing and good air. The chief indications for treatment were: (1) to keep up the nourishment of the system without adding to the intestinal irritation; (2) elimination, by the use especially of alkaline sulphates, Glauber's salt being most useful in children over nine months of age (ten grains every hour or half hour for four or five doses); in younger infants or when the patient was very depressed calomel or castor oil should be given, together with colon irrigation or lavage of the stomach; and (3) to allay the inflammation. He considered that atropine ($\frac{1}{150}$th of a grain given hypodermically every two hours) was an excellent remedy and also that opium was not so much used as it deserved to be. He was accustomed to give it when the temperature was normal and there was no marked toxæmia but yet the diarrhœa did not yield to other remedies. He gave one-fifth of a grain of Dover's powder or five minims of paregoric after each loose stool.

Dr. SHAW (Montreal) read a paper on

A Study of the Absorption of Fat in Infants.

He fully described his methods and illustrated his paper by several charts and diagrams. He said that the irregularity in the quantity of volatile fatty acids found in the fæces during his observations showed that they were not dependent upon any one constituent of the food. In the normal infant the amount of neutral fat in the fæces was very small—0·107 gramme a day in the breast-fed infant and 0·179 gramme in the bottle-fed infant. Most of this was fat that had escaped the action of the fat-splitting enzymes by being entangled in proteid curds. About 4 per cent. of the fat ingested appeared in the fæces in nurslings and 5 per cent. in bottle-fed infants. The fat found in the fæces was to a great extent fat that had escaped digestion. The fatty compounds in the fæces existed as neutral fat, fatty acids, and soaps. The fatty acids were usually in excess of the other two constituents. The soaps were increased in artificially fed infants, in infants with a low percentage of fat in the food, and in infants with diarrhœa.

Dr. RALPH VINCENT read a paper on

The Milk Laboratory in Relation to Medicine.

He gave details as to the establishment of the Walker-Gordon milk laboratories and outlined the treatment of gastro-intestinal disorders in children at the Infants' Hospital, London. In that institution drugs were almost entirely discarded and such disorders were treated by modification of milk in the diet. He was of opinion that an infant could be reared upon properly modified cow's milk just as well as upon breast milk. He was particularly severe upon the host of artificial infants' foods, the only saving clause with most of them being that after a certain time the infant refused to persist with them and, with a sense of the fitness of things remarkable at an early age, consistently vomited them. He considered that the use or tolerance of patent foods for young infants by medical men was most damaging to the reputation and scientific standing of the profession. The educational influence of laboratory methods on mothers and nurses was very good. The care exercised by the laboratory impressed them with the importance of the subject and encouraged them to understand the real meaning of infantile nutrition.

Dr. ASHBY said that the establishment of the Walker-Gordon milk laboratory was almost entirely due to Dr. Vincent's enthusiasm.

Dr. BLACKADER said that in his opinion much harm was done by taking infants out for what was known as a day's outing when all food required for the day was taken with them and on account of the increased liability to fermentation of the food gastro intestinal disorders were likely to be produced in this way. He thought that the dread of giving opium in such disorders was carried too far.

Dr. PUTNAM, Dr. RIDDELL, Dr. BENEDICT, and Dr. KNOX also joined in the discussion.

Dr. MORSE said that he did not much approve of milk laboratories but that if he could get pure clean milk he would as soon have it modified at home. He entirely disagreed with Dr. Vincent's remarks about breast feeding, the importance of which he strongly emphasised.

FRIDAY, AUGUST 24TH.

The closing session of this Section was chiefly occupied with an interesting discussion on

Congenital Pyloric Stenosis.

This was opened by Dr. EDMUND CAUTLEY, who dealt with the medical aspect of the affection. He directed

attention mainly to two groups of cases: 1. Functional pyloric spasm, the main feature of which was severe and continued vomiting without any gastric dilatation or pyloric tumour. Cases of this kind were extremely likely to give rise to an erroneous diagnosis of congenital hypertrophic stenosis. They usually recovered on a diet of whey with small doses of cocaine internally. 2. Congenital hypertrophic stenosis. He had had 16 cases under his own observation, on the course and results of which his conclusions were mainly based. Almost all occurred during the first three months of life, generally during the first month, indicating that the affection was one of very early life, that it did not develop after this age, and was probably congenital in origin. Lack of appetite might be the first symptom but was often overlooked. Vomiting was the chief characteristic; in typical cases two or more meals were kept down and then the whole lot was brought up forcibly and violently ejected, sometimes to a distance of three feet. There was some pain but no nausea and food could be taken almost immediately after. Constipation was usually present; the child wasted progressively, sometimes with extraordinary rapidity, the temperature was subnormal, and the pulse small, frequent, and weak, the general appearance being one of whining lethargy, with half-open eyes. The physical signs were visible peristalsis, dilatation of the stomach, and a tumour in the region of the pylorus, half an inch to the right of, and three-quarters of an inch above, the umbilicus, of about the size and shape of a filbert. The pathological condition in this affection was a true hyperplasia, an overgrowth of the circular muscular fibres of the pylorus. Possibly the condition represented an atavistic tendency, a reversion to an earlier type of pyloric development analogous to the "gastric mill" of crustacea and edentata and the "gizzard" of birds. Though he admitted that spasm might exaggerate the obstruction, yet he maintained that it was not the prime cause, and he was not a believer in the "spasm" theory. The prognosis in these cases was extremely bad if treatment was purely medical, even when the obstruction was incomplete. With regard to treatment in a doubtful case the food should be as simple as possible, non-irritant, and given in small quantities at a time. In addition, $\frac{1}{10}$th of a grain of cocaine or a minute dose of opium, say a quarter of a minim of the tincture, should be given every hour. If there was no improvement in a few days the stomach should be washed out daily with a weak alkaline solution. When the diagnosis was certain operation should be undertaken at once. He regarded the stretching operation as unscientific and dangerous and considered that pyloroplasty afforded the best results. A good anæsthetist was essential. Immediately after the operation a rectal feed should be given, one ounce each of peptonised milk and water, with 20 drops of brandy if needed. This should be repeated every four hours for two days, every six hours for two days, then twice a day for two days. A teaspoonful of hot water should be given by the mouth every quarter of an hour for six or 12 hours, after that a similar quantity of whey. Subsequently the diet should be slowly increased to two teaspoonfuls every quarter of an hour, half an ounce every half hour, one ounce every hour; and finally two ounces every two hours; then gradually strengthened by the addition of cream or replaced by peptonised milk or milk and water, until the child was on an ordinary diet.

Mr. HAROLD J. STILES (Edinburgh) treated the subject from the surgical aspect. He reviewed in detail both the normal and morbid anatomy of the parts and said that while he could fully corroborate Professor Cunningham's statement that in post-mortem specimens the normal pyloric canal of the child was usually in the contracted or systolic condition described by Pfaundler, yet he had no hesitation in stating that, without exception, all the cases of infantile pyloric stenosis which he had operated on during life, or examined after death, showed an amount of muscular thickening of the pyloric canal two or even three times greater than any normal pylorus that he had ever come across. The main fact which concerned the surgeon was that he had to do with an organic but purely muscular hypertrophy of the pyloric canal, associated with excessive tonic contraction, aggravated no doubt by more or less spasm, but it was difficult to say whether the latter was cause or effect. With regard to treatment, it was important that medical treatment should not be too long persisted in but that the patients should be submitted to early operation. He detailed the various steps of the operation, laying particular stress on the following points. Shortly before the operation the stomach should be washed out and an enema of one or two ounces of saline solution and from 10 to 20 drops of brandy given. In many cases it was advisable to introduce saline solution subcutaneously into both sides of the chest. A good anæsthetist was essential; the anæsthetic should be chloroform and ether followed by ether alone. On no account should an antiseptic (especially carbolic acid) poultice be applied to the abdomen even for an hour or two before the operation, as it had been shown by Dr. Kruger that a lethal dose of the drug might very easily be absorbed by the skin in that time. The skin incision should not be more than two inches in length, having its centre midway between the ensiform cartilage and the umbilicus. Great care in the closure of the abdominal wound was most important in order to avoid the risk of the wound bursting open after it had firmly healed or the occurrence of ventral hernia. The abdominal wall was so thin that suturing in layers was out of the question. Interrupted sutures of fishing gut should be used; they should be passed through the whole thickness of the abdominal wall and one extremity of each threaded with a piece of thin rubber tubing half an inch in length and tied in such a way that the portion of the loop which overlay the skin was surrounded by the tubing in order to prevent the suture cutting its way through the skin. Mr. Stiles described the various operations which had been undertaken for congenital pyloric stenosis—viz., (1) Loreta's *Divulsion* operation, the great point in which proceeding was that it should be done gradually yet thoroughly. Out of a total of 29 divulsions which he had been able to collect there had been 15 recoveries—a little over 50 per cent. (2) *Gastro-enterostomy*, in which he recommended the posterior operation. He had collected 37 cases, with 16 recoveries (43·2 per cent.). (3) *Pylorectomy*. He had only had one case, which died from shock, and he considered it an unnecessarily severe procedure. (4) *Pyloroplasty*. He had only performed it once, unsuccessfully, but it was the operation performed and recommended by Mr. Clinton Dent who had operated in Dr. Cautley's cases. He had five recoveries out of 11 cases (45·4 per cent.). There were two other operative procedures employed by Mr. Nicoll—viz., a combination of divulsion with gastro-enterostomy, and a modified form of pyloroplasty, which he described in the author's words. Five out of six cases operated on by this method recovered. It seemed to him that cases of pyloric stenosis should be divided into two distinct groups—viz, (1) the purely spasmodic, without any hypertrophy, which might be expected to get well under dietetic and medical treatment, and (2) the true congenital hypertrophic, which must assuredly die unless surgical treatment were resorted to. He believed that there was also an intermediate group, in which the hypertrophy although present was less marked. It was these cases which had led to the confusion and difference of opinion regarding the pathology and treatment of the disease. He would advise a diagnostic incision in all cases in which the diagnosis was doubtful and medical treatment afforded no relief. If there appeared to be distinct though not marked hypertrophy and the infant was very young and weakly, he would be contented with divulsion. When there was marked hypertrophy and the patient's general condition was satisfactory the choice lay between pyloroplasty and gastro-enterostomy and the surgeon would no doubt choose the procedure of which he had had most experience.

In the discussion which followed Dr. PUTNAM (Boston) gave details of a case which he had successfully treated by forcible dilatation with a uterine dilator. The tissues torn by the rupture had been closed by sutures.

Dr. ROBERT HUTCHISON (London) expressed profound disagreement with the views of Dr. Cautley and Mr. Stiles. During the last two years he had seen eight well-marked cases of the disease, all of which recovered under medical treatment. So long as such a series of cases could be produced operation could never be regarded as the best treatment in the early stage.

Dr. ASHBY mentioned two cases in which post-mortem examinations had been held and showed a specimen. He did not feel justified in urging operation in these cases though he might recommend it.

Dr. KERLEY said that he was particularly interested in Dr. Hutchison's remarks. He had lately had a case presenting all the classical signs of pyloric stenosis which recovered completely with small quantities of breast milk and daily lavage. If no improvement occurred under suitable medical treatment he would recommend an exploratory operation.

Dr. PRIMROSE (Toronto) suggested that dilatation of the stomach was the primary factor and that the pyloric stenosis was caused by the difficulty in overcoming the mechanica

effects of dilatation. He thought that some surgical procedure might be devised in order to diminish the size of the dilated stomach and avoid the risks of gastro-enterostomy or pyloroplasty.

Dr. VINCENT said that, in his opinion, the presence of a palpable tumour was an essential point in the diagnosis of these cases. He did not agree with Dr. Hutchison's views and could not accept the diagnosis of stenosis in the cases which he had mentioned.

Dr. MACHELL said that cases of congenital pyloric stenosis were not common in Toronto. This was evidenced by the fact that up to the present no case had been admitted as such into the Hospital for Sick Children, Toronto. The same applied to the Infants' Home, where many of the infants were nursed and looked after from birth up to two years of age.

Remarks were also made by Dr. PORTER (San Francisco) and by the PRESIDENT, and Dr. CAUTLEY and Mr. STILES briefly replied.

The business of the section concluded with a paper by Dr. ALBERT E. VIPOND (Montreal) on

The Glandular System in Infectious Diseases.

He discussed in detail the significance of enlargement of the lymphatic glands in the various infectious diseases and pointed out that as this enlargement appeared some days before the development of the diseases it formed a valuable aid to diagnosis and enabled isolation to be carried out more effectually.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Sept. 27th, 1828.

INUTILITY OF THE APOTHECARIES' ACT.

To the Editor of THE LANCET.

SIR,—The recent letters which have appeared in several numbers of your invaluable publication upon the inutility of the Apothecaries' Act, and the abominable and destructive practices of unqualified pretenders to medical science, must have excited one common feeling of indignant regret in the minds of every well-educated and genuine member of the profession. Unfortunately the evil is not confined to the north of England, nor to any particular district or county. Ignorant and unprincipled pretenders to pharmacy and surgery are to be observed, and might be pointed out to public reprehension in every part of this widely-extended metropolis. Probably it may be conferring a favour upon the public to describe the general mode by which these aspirants to Æsculapian fame attempt to possess themselves of medical honours. Their origin is usually very humble. A capacity to write a legible hand, and work the first four rules of arithmetic, at the age of thirteen or fourteen years, recommends them to the notice of some mechanic or artisan, who, upon trial, finding the boy either too dull or too lazy to learn his handicraft, discharges him from his service. Chance now introduces him as a basket-boy, or general drudge, into a druggist's shop. After filling a situation of this degrading nature for two or three years, he contrives to advance a step by entering the service of the general practitioner. By observation, he acquires the names of drugs, and, after a time, makes up medicines. A further advance is now sought, and by paying his half crown to the beadle of Apothecaries' Hall, he obtains a situation as a dispenser of medicine to some practising apothecary. Recruiting his finances in such a situation for a few years, he then proceeds to open a retail druggist's shop, in some leading street or neighbourhood. The rent of the house is made by taking lodgers; the vending of salts, senna, and other wares, furnishes a scanty income. Our adventurer next proceeds to advertise for an apprentice: obtaining a premium of 150 or 200 guineas. In six months, this youth is left to manage the shop, and the *master* now, for the first time, professes to be seeking knowledge. With the cash thus obtained from a deluded and too credulous parent or guardian, he proceeds to enter himself a medical student. Two courses of anatomical lectures, two on the practice of physic, one on materia medica and chemistry, and one on the theory and practice of midwifery, and a forged indenture of apprenticeship for *five years* to some reputed apothecary, furnishes our hero with a *legal passport* to the wise men assembled in solemn conclave at Apothecaries' Hall. This body of self-elected Examiners (being a century behind the better educated general practitioner in literary and professional acquirements) have scarcely intellect sufficient to enable them to undertake an adequate professional examination. Creatures, therefore, of this mediocre description, *pass* as a *matter of course;* and apothecary being now legally tacked to his name, surgeon also is immediately appended, and then the bluster and pomp of a new and important office is observed to commence.

A fellow of this origin and character (called, perhaps, in the absence of a better-informed practitioner, to a case strictly under his neighbour's care) commences with denouncing, in a bold and clamorous manner the measures which have been pursued, and promises to cure the patient in quick time. Nature kindly seconds his impudent pretensions, and this daring charlatan, in spite of his own mischievous principles, (if, indeed, he have any to direct his treatment,) exults in finding, by an unexpected and propitious *turn-up*, he has out-witted his less arrogant and pretending rival, and obtained credit for superior discernment in that circle to which he has been, by mere accident, introduced.

Believe me, Sir, this is not an overcharged statement, it is a true picture of the history of several individuals well known to the writer of this letter, and also to many of the more respectable members of the profession. If any candid mind can doubt the truth of the assertion, let him convince himself; and if he will only take the trouble to walk from the central bridges to the southern or eastern extremities of this great town, and observe, where only chemist and druggist were a year or two since recorded, surgeon and apothecary are now inscribed; and if the inquirer will refer to the list of the College of Surgeons published every year, he will no longer doubt the fact of the appellation of surgeon being gratuitously assumed by such *honourable persons*. The public, particularly parents and guardians, should be cautioned against such designing impostors, who are in the habit of living upon premiums thus surreptitiously obtained, and have not capacity sufficient to direct the elementary studies of the unhappy youths consigned to their barbarous tutorship, nor liberality of mind to treat them with the courtesy becoming a gentleman. Connected with this irregular and disgraceful introduction to the profession, may be fairly said to emanate the degrading system of farming the medical attendance of the poor in populous and extensive parishes. Were it not for these interlopers, those fungoid excrescences in the shape of licensed apothecaries and self-constituted doctors, no surgeon, of competent education and acknowledged talent, would condescend to accept such a disproportionate measure of remuneration, alike repugnant to the moral and healthy condition of the poor, and derogatory to the character of an honourable and useful profession; but the respectable surgeon is compelled, in defence of his own interest, to succumb to a precedent, and adopt a practice he abhors.

The remedy for this, as well as other grievances in the profession, lies in an appeal to the legislature. If we succeed, as I hope we shall, in obtaining a new charter for the College of Surgeons, this evil, among many others, we may hope to see reduced. The character of the profession advanced, by giving its constituted members authority to charge for visits and time, instead of cramming a superfluous quantity of medicin down the throats of patients, in order to make out a charge. A revolution must take place in the present system of remuneration. The Trading Act of 1815, has been found altogether inoperative to prevent unqualified persons, and it is evaded every day with perfect impunity!

The College of Surgeons have no power to restrain adventurers from infringing its *supposed rights*, consequently the privileges of its members between the two imbecile corporate bodies are totally sacrificed. Happily for the profession, by the united energies of your talents, and the commanding influence of your weekly Journal, a new era has dawned upon the destiny of surgery; public feeling and public opinion has been aroused. In vain may the advocates of monopoly, and the influence of the whole body of corruptionists, attempt to stem the force of equity and of truth upon the minds of the community; and that its claims may be fully and speedily recognised and permanently secured, is the fervent wish of your devoted friend and constant reader,

A DEGRADED MEMBER OF THE COLLEGE.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 29, 1906.

What is Specialism?

OUR correspondence columns have lately borne abundant testimony to the interest taken by the medical profession in some of the modern developments of what is vaguely called "specialism," and in questions connected with the methods by which this "specialism," in some one or other of its varieties, may be embraced as a declared and legitimate limitation of the intended field of action of a practitioner, carrying with it, as it unquestionably does, a definite claim to the possession of more than ordinary skill and knowledge concerning the subjects covered by its title. Some of our correspondents have enlarged upon the difficulty of establishing a "special" practice, and one has gone so far as to describe a large proportion of "specialists" as being, at least for a time, persons who are ignorant of everything in general, the so-called "specialism" not excepted, until they have had opportunities of learning something about the particular branch of practice to which they propose to devote themselves. To put the matter quite simply, we believe that much of what is called specialism is a consequence of demands created by the ignorance of the public rather than of any legitimate division of labour in the profession; and that it behoves both the leaders of medical opinion and the guides in whom the public repose most confidence to contend, so far as they are able, both against the artificial multiplication of so-called "specialisms" and against their being used as stepping stones to exceptional practice.

"Specialisms" are roughly of two kinds, those for the practise of which some form of knowledge is required which has no applicability to the diseases of other portions of the body, and those which are mere limitations, and in which the practitioner applies the ordinary principles of medicine, of surgery, or of therapeutics, within a restricted area. The former kind includes ophthalmology and otology; the latter includes certain natural divisions, such as gynæcology and dermatology, but these may be indefinitely and undesirably increased in number by the caprice of any practitioner who chooses to say that he will confine his practice to certain conditions of the system or to certain structures or regions of the body. Men who commence practice with no intention of becoming specialists may yet be guided into some particular department almost by accident; and as they acquire distinction in it may find that their services are but little sought after in other directions. In such cases they lapse into specialism gradually, and sometimes unwillingly, and it may be long before they lose either the possession of general professional knowledge or the desire to exercise it. For obvious reasons we will not speak of living persons, but we need not go far back in medical history to find good illustrations of our meaning, drawing those illustrations from ophthalmology, the best example of definite specialism. The late Sir WILLIAM BOWMAN was surgeon to King's College Hospital and teacher of physiology in the school. His attention was first directed to practical ophthalmology when doing his admirable work as a physiologist on the minute anatomy of the eye, and on the early death of Mr. DALRYMPLE he stood forth as his obvious successor. The late Mr. CRITCHETT, again, had become senior assistant surgeon to the London Hospital before the amount of eye practice coming to him by reason of his connexion with the Royal London Ophthalmic Hospital induced him to abandon general surgery, in which he had already made his mark as an accomplished diagnostician and a brilliant operator. These gentlemen were "specialists" of a perfectly legitimate kind. They were surgeons completely equipped with professional skill and knowledge, and they were induced by circumstances to confine their activities within the limited field which they cultivated with untiring assiduity and to the great advantage of the public. Their patients would not have derived any benefit if Sir WILLIAM BOWMAN or Mr. CRITCHETT had continued to make occasional excursions into the fields of lithotomy or herniotomy but undoubtedly derived great benefit from the knowledge of the general principles of surgery and of therapeutics possessed by the famous ophthalmologists, and from their ready appreciation of the influence of constitutional upon local conditions. We hold that no man should voluntarily limit himself to a single branch of professional activity until he has so far gained experience over the whole field as to be able fully to appreciate the influence which may be exerted by such conditions as constitutional syphilis or a gouty diathesis over the changes produced by disease or treatment within the boundaries which he specially affects. If this opinion be well founded, it follows that too early a limitation of the field of practice is more likely to be injurious than to be useful and that it is, generally speaking, an error of judgment for a young man to start in life with the idea of becoming a specialist. If he does so, he should at least realise the necessity of gaining wide experience and of keeping himself abreast of progress in all departments of the profession.

It is not the least of the mischiefs of specialism that, by marking off certain areas as the property of a few individuals, it has some tendency to induce general practitioners to neglect these areas and to be contentedly less conversant than they ought to be with the matters contained within their boundaries. If we are to have new limitations set up (and the tendency of the present day seems to be in that direction), if we are to have a specialist for obesity, and a specialist for dyspepsia, and a specialist for gout, and a specialist for the liver, and a specialist for the heart, what will be left about which the general practitioner may be expected to possess ample knowledge, and where and by what means will it be possible to train up such men as JENNER and GULL and ANDREW CLARK for the benefit of future generations? The whole question is, we think, one concerning which the profession should strive to educate the public. The human body does not admit of being parcelled out in compartments; and a specialist, say in the

diseases of the great toe, is not likely to justify the confidence for which he asks, unless he is thoroughly conversant with the ways and directions in which the state of the great toe may be influenced by the general bodily health, or may exert influence upon it in turn. With regard to those of our correspondents who inquire as to the methods by which they may legitimately make known to what malady or to what portion of the body their energies are to be devoted, or even the fact that they do propose to limit their activities in such a manner, we fear we have no suggestion that would be of practical value. The main objection to all the devices which we have ever seen for informing the public of an intention to specialise is that they savour of trade and of trade competitions. It is incumbent on all who practise medicine to emphasise the fact that our calling is not a mere trade. Its members must merit and win the esteem and confidence of the public as a profession of honourable gentlemen, scrupulously excluding from their ranks everything that savours of pretentiousness and self-assertion. We cannot run with the hare and hunt with the hounds. We must stand absolutely aloof from the devices of competition or we must submit to be submerged by them.

The Perils of Vagrancy.

JUST as an organism cannot be called healthy if any part of it be the seat of disease, so the body politic is defective if any class or section of it be living in unsatisfactory conditions. Much attention has recently been directed to the increase which has taken place in the number of social outcasts, collectively designated as tramps or vagrants, and it is to be hoped that a serious effort will shortly be made to deal with the problem presented by the existence of this class. It is not only on philanthropic grounds that steps in this direction are urgently called for; the mere instinct of selfishness or prudence dictates to the well-to-do portion of the community the necessity for abating the evil, when it is considered how often outbreaks of epidemic disease have been traced to infection carried by tramps, and how great and preventable a sacrifice of lives and money is thus incurred. But as in the case of physical disease, so here it is impossible to devise adequate remedies for the condition in question until we possess exact knowledge of the pathology—the causation and real nature—of the social defect. Until we obtain such knowledge it must be impossible to apply other than empirical measures of relief. Symptoms have been combated, outward manifestations suppressed, but the root of the evil has remained unaffected. Severe measures may have succeeded, in particular localities, in diminishing the number of admissions to the tramp wards of the poorhouses, but the total number of vagrants throughout the country has continued to increase, and will, we fear, increase until some great and organised measures of relief can be devised.

The study of the problem of vagrancy has been defective owing to the difficulty presented by attempts at investigation. The class of tramps is an unsavoury object of research and its members are generally suspicious of inquirers and unwilling to discuss their circumstances and the causes of their submergence. From time to time some enthusiastic inquirer has descended into the abyss and passed as a tramp for the nonce—some journalist in search of copy, *audax omnia perpeti*, or some amateur philanthropist; but owing perhaps to lack of training in social problems the fruit of their investigations has been so far small. A serious attempt to grapple with the question by personal research among the outcasts themselves has recently been made by one well-qualified to turn the knowledge gained to good use and able to formulate suggestions for reform in our mode of dealing with the class of wanderers. In a volume entitled "Glimpses into the Abyss"[1] Miss MARY HIGGS relates her experiences as a denizen of many casual wards and humble lodging-houses and offers some practical advice as to the cause of the tramp evil and the best mode of dealing with it. Miss HIGGS's book is tragic enough, but there is no piling up of horrors to make a lurid story more revolting or more pathetic. It is obviously a record of first-hand and searching scrutiny, by one who is quick to see, well equipped to observe, and fearless in putting her impressions to the test. A study of her work cannot fail to correct some of the errors into which the uninitiated person usually falls, for she throws a new and instructive light upon the question of the attitude to be adopted towards the roving population which forms the lowest stratum of our civilised state. It is too often assumed that all "tramps," the dilapidated specimens of humanity met with on the high roads walking wearily from town to town, are Ishmaels who have taken to the vagabond's life owing to laziness of disposition, who exist by begging and terrorising the cottagers along their route, and who are enabled to live in unmerited comfort owing to the mistaken leniency of our system of Poor-law administration. That there are a considerable number of individuals who would fairly answer to such a description is unfortunately true enough but Miss HIGGS supplies evidence that goes far to prove that these persons form a comparatively small proportion of the vagrant population. Most of those who claim the shelter of the casual ward are of distinctly higher type. They consist of workers who are unemployed but who are honestly willing to work if they can find suitable occupation. When this truth is once pointed out it is not difficult to see that there must be a large number of such unfortunates wandering in search of work. One of the assumptions of the political economist is that capital and labour are both mobile and readily able to migrate from one industry to another. How false this assumption is in the case of the individual labourer is gradually being discovered. A skilled workman thrown out of work is a wasted asset of national wealth. Even the unskilled has to transfer himself painfully to some other locality to find work, and to do so he must tramp on foot if he has not money enough to pay a railway fare. Just now the number of unemployed is large, for many industries are declining and few new ones seem to arise to take their place; hence the number of men who are out of work and obliged to wander in search of employment is also large. What is the prospect for such a vagrant, an honest man at the outset of his migration? He must repair to the tramp ward to be herded with the dirty and the vicious. Miss HIGGS shows that the hospitality which he will receive at

[1] Glimpses into the Abyss. By Mary Higgs. London: P. S. King and Son. 1906. Pp. 331. Price 3s. 6d. net.

the hands of certain authorities is not calculated to leave him a particle of self-respect or much chance of remaining the average good citizen that he may hitherto have been. He may be given food far worse than that supplied to criminals in prison and insufficient to keep up that modicum of strength with which he set out to look for work, and on this food be expected to perform a task of labour harder than that of a convicted felon. The alternative is the common lodging-house and Miss HIGGS shows that in these places such a vagrant may be lodged in insanitary quarters, left unprovided with the essentials of common decency, and compelled to sleep in a garment which has already been worn by an unknown number of dirty predecessors in misery, amid verminous companions, on a bed seemingly contrived as an instrument of torture. Little wonder, where such things occur, if a few weeks of the life make of a respectable workman a despondent outcast or a criminal. For the woman who has fallen on evil days it is even worse. She is irresistibly driven to a life of prostitution when the pressure of poverty is aided by the constant association with abandoned characters. We know that medical men have done all in their power to remedy maladministration of the law, and over and over again it has been pointed out that a badly kept tramp ward is a focus of danger to the community; but the abuses remain, and the assistance of Government will be required to deal with them systematically.

Upon Miss HIGGS's excellent observations certain indications follow for improving the state of things now prevailing in parts of the United Kingdom. First of all it is necessary to discriminate between the hopeless loafer who will not work, the true worker in search of a job, and the man who is physically unable to earn a living by manual toil. This may not seem easy of accomplishment but it is not so difficult as appears. The last class can be detected only by careful medical inspection, but being so identified can be more or less eliminated. Then if a reasonable task were set to all applicants for relief the able worker would willingly perform it and should thus earn for himself a substantial meal and clean sleeping accommodation. The idler who refused or scamped the work should be treated as the social danger which he actually is and sent to prison or to some labour colony of a penal type. Miss HIGGS would have the seeker after employment helped on his way by the provision of a ticket entitling him to food and lodging in return for a task of work at the next station on his road, while by some system of public labour bureaux information as to hands needed in particular industries in different parts of the country should be made available to all. Here Miss HIGGS is in line with every practical thinker; the suggestion has been plentifully made and has been supported in our columns before now. Much might also be done for those who are not absolutely indigent by provision of cheap yet sanitary lodging-houses in which they could find accommodation while looking for work, thereby avoiding the common lodging-house as it now exists. Common lodging-houses require far more exacting scrutiny than they receive, and to this end we would urge upon the Government the absolute necessity of giving some security of tenure to medical officers of health. Common lodging-houses are frequently valuable private property, from which category we omit those managed—and for the most part admirably managed—by the Salvation Army, and in the present state of the law it may be impossible for a medical officer of health to obtain an abatement of abuses which stare him in the face. The tramp wards of our workhouses, despite Miss HIGGS's unfortunate experiences, are not the source of public danger that the institutions controlled by private persons for private profits are known to be. The medical officer of health, for every conceivable reason of public policy, ought to be set in a strong position to deal with these places.

The Registration of Opticians.

REFERENCE has frequently been made in our columns to the ambitious schemes of opticians, as well as to a Bill before Parliament for the purpose of registering opticians and thus supplying them with an official and professional status. This apparently harmless procedure really means the licensing of working opticians, druggists, and others who have received no medical education, to prescribe spectacles. The opposition to the Bill by the medical profession is being put forward by a joint committee of the Ophthalmological Society and the British Medical Association, and we may be sure that in their hands the logical arguments against such an anomaly will obtain proper prominence. The matter is one which affects the majority of general practitioners and not only the ophthalmologist, for the principle at stake is no less than the infringement of the rights and the prerogatives of the medical man. The public are as yet ignorant in matters of this nature. Too readily they fly off to the prescribing druggist for an aperient pill or a headache powder, or to the optician for spectacles, and their ignorance prompts them to see in the protests of medical men only a selfish resentment. We do not say that medical men are more altruistic as a class than other citizens—whatever we may think, but it is certain that unqualified medical practice of all sorts is perilous to the public weal. We return to the subject of the registration of opticians with the hope that the continual discussion of the matter will make the true position more evident to the public.

In the *Ophthalmic Review* for September of this year Dr. A. FREELAND FERGUS states the case for the medical man in much the same terms as it has been frequently stated before by our medical contemporaries and ourselves. He rightly observes that "no one is competent for ophthalmic work who has not had a very extensive training in the profession of medicine generally." He points out that registration might prevent the totally unqualified optician from prescribing glasses but questions "very much if any such legislation will be put on the statute book." We consider that it is about as probable as preventing druggists from prescribing. But Dr. FERGUS regrets that there is no British diploma or degree giving to its holder a qualification in ophthalmic medicine and surgery, and here we are not prepared to follow him. He would have a special register for ophthalmologists like that for dentists, separate from the general Medical Register. He advocates a very extensive curriculum for the ophthalmologist. The ophthalmic student should, in his opinion, have a thorough knowledge of plane trigonometry and some idea of the

elements of the calculus. An extensive course of physics should be required of him with probably two years of laboratory experience, while his training in medicine and surgery should be quite as extensive as for a student who intends to take up medical practice, and pathology should receive particular attention at his hands. We are not prepared to advise a marking off of the ophthalmologist from his surgical and medical colleagues. An ophthalmologist is first and foremost a surgeon, and as such his qualification should rank with the highest in surgery if he desires to hold consultant rank. A branch of the M.S. or F.R.C.S. examinations at the universities or Colleges might be arranged so that special credit would be given for knowledge of ophthalmology, always provided that the standard of the requirements in pure surgery were not materially lowered. But even for the avowed specialist whom Dr. FERGUS has in his eye so extensive a training in mathematics and physics as he suggests would not, in our opinion, be necessary, and to make it compulsory would lead to practical inconvenience. Probably very few ophthalmologists commence their medical education with the fixed intention of devoting themselves to that particular branch of practice, while a knowledge of trigonometry and calculus is by no means essential to the scientific practice of ophthalmology. An adequate knowledge of the optical principles of the eye and of lenses and prisms can be attained without any profound knowledge of mathematics. It is an advantage for an ophthalmologist to know exactly how lenses are ground and spectacle frames made, but it is no more essential than for a bacteriologist to know how an oil-immersion lens is made. Whilst holding this opinion we are aware that the study of optics is at present neglected in the medical schools of Great Britain, and we would urge upon all these schools the necessity of seconding the work of the General Medical Council by improving the standard of ophthalmology in the examinations.

The *Optician and Photographic Trades Review* of Sept. 14th, the weekly organ of the optical, photographic, acetylene, electrical, nautical, philosophical, and mathematical instrument industries, criticises Dr. FERGUS'S paper in a leading article entitled "Prejudice and Pique," and in so doing brings new material to an old discussion. But to be new is not necessarily to be correct. We are at a loss to discover how the *Optician and Photographic Trades Review* learns from Dr. FERGUS'S paper, or from any source, that "there are practically no examinations in ophthalmology for medical men. Only one British board has such an examination, *and at some boards no evidence of knowledge of ophthalmology is required.*" There is no medical examination board where ophthalmology does not form part of the curriculum, while the General Medical Council has been particularly active in insisting that the subject should be treated by examiners with due importance. It was scarcely to be expected that an advocate for the claims of opticians would bring forward the treatment of glaucoma as an argument in favour of the registration of opticians. Yet so it is. Purporting to quote "a charge made recently in a prominent medical journal" to the effect that "medical men ignorantly treat cases of glaucoma until they are too far gone for specialists to effect any good" the *Optician and Photographic Trades Review* thus continues: "And it is from these same general practitioners that the ranks of ophthalmic surgeons are recruited! Now, our properly trained optician can recognise such cases at once, and send them forthwith to the oculists." We do not know what medical journal or what medical man holds this contemptuous view of the medical profession but we suspect the writer of the sentence to be muddled in his ideas about glaucoma. It is, also, scarcely necessary to point out that the ranks of ophthalmic surgeons are seldom recruited from the general practitioners—when they are the advantages which accrue are very large. We have no hesitation in asserting that no optician is *competent* to diagnose glaucoma. Such competency can be attained only by a complete medical and ophthalmological training. Even then obscure cases of glaucoma are liable to baffle the most expert and the man with a merely optical training would be certain of making appalling errors. It is given only to the few to be, like HANS SACHS, at once a good cobbler and a *Meistersinger*, and legislation must be for the average, not for the exception. We have every sympathy with the ambitions of the optician but the public must be protected from the medical advice of laymen. The ophthalmologist and the optician are natural allies, and the efficacy of the division of labour is an economic law and no longer a theory. Needles have been better made since half a dozen workers perfected themselves in their several tasks. The best work is done by those who have a pride in doing it because they know that they do it well. The optician who prescribes glasses lowers the dignity of his own calling, not because he is not often right but because he may be so often wrong. The day may come when there will be a yet closer union between the ophthalmologist and the optician, and when the optician may do refractions under medical supervision. But we are concerned now with the present and there can be no doubt that to give a legal position to opticians as experts in a difficult branch of surgery will be to override the Medical Acts.

Annotations.

"Ne quid nimis."

THE DISPOSAL OF LONDON REFUSE.

IN the *Times* of Sept. 20th Mr. Windham G. Sandeman writing from Dartford-heath, Crayford, Kent, appeals for assistance in circumstances which are far too common in counties near London, especially in Essex and Kent. Mr. Sandeman tells us that "there is being built up a veritable mountain of poisonous refuse culled from London dustbins and middens. Week by week there is a steady stream of all manner of foul débris which includes the rotting carcasses of dogs, cats, fowls, &c. There is also intermingled a vast body of decaying vegetable matter which appears to supply a gentle heat to assist in the process of putrefaction. The air for over a radius of a mile is poisoned, each point of the compass being visited in turn according to the wind prevailing at the moment. We have unpleasant results immediately in the form of sore-throat and attacks of a feverish nature, and in prospect there is a grave danger, for this vast tract of filth lies adjacent to a

pumping-station and the chalk formation underlying may at any time supply a mixture which will speedily be distributed to hundreds of thousands of water consumers with results too deadly to contemplate." Mr. Sandeman then refers to "myriads of flies and thousands of rats," which this refuse has been instrumental in attracting and to the risk which is thereby incurred of the distribution of fly- and rat-borne disease into houses. Although perhaps Mr. Sandeman is allowing himself a little latitude in certain directions, more especially, perhaps, in speaking of *midden* refuse—if he uses this term as implying the presence of human excreta—we can fully sympathise with him. The refuse in question is, we expect, ashbin refuse, which as a rule contains, in addition to ashes, much vegetable and some animal waste, a combination which is always liable to produce a peculiar condition of sore-throat and may at times give rise, by wind- or fly-borne infection, to diarrhœa or diphtheria, or conceivably, through infected rags and such-like, to enteric fever, an aspect of the question which is rendered more serious in this instance by the circumstance that the refuse is alleged to be in the vicinity of a chalk well supplying a very large population with drinking-water. Risk in this sense depends, however, upon the extent to which the chalk formation is fissured and uncovered by any impermeable formation. The remedy may be difficult, especially if the refuse is used for any industry such as brick-making, in which case action under Section 91 of the Public Health Act, 1875, might fail on the pretext "that the accumulation or deposit has not been kept longer than is necessary for the purposes of the business or manufacture and that the best available means have been taken for preventing injury thereby to the public health." If, for instance, the refuse were carefully covered over with earth so as to prevent disturbance by wind or carriage of filth by flies it might be held that the best available means had been taken. But if this were the case in the present instance it is unlikely that the nuisance would be detectible "for over a radius of a mile." The question as to whether the nuisance is one which might be dealt with by means of by-laws under Section 44 of the Public Health Act, 1875, would depend upon the precise position and source of the accumulation here in question. But we would advise Mr. Sandeman to procure a copy of a report on manure nuisances[1] which was made to the Local Government Board by Dr. H. Franklin Parsons as this may, we think, help him to devise a means of attacking the nuisance of which he complains. It is, of course, much easier to deal with nuisances of this nature in an "urban" than in a "rural" district, and we fear that in this case a "rural" area may be in question. But in many "rural" areas the conditions are in places practically "urban," and if this be so in this instance it may be easier to remedy matters.

THE FRENCH SURGICAL CONGRESS.

THE Nineteenth Congress of the French Association of Surgery will be held at Paris from Oct. 1st to 6th. The President is M. Monprofit of Angers, professor at the Angers School of Medicine and surgeon to the Hôtel Dieu of the same town. The Vice-President is M. Berger, professor at the Faculty of Medicine and surgeon to the Necker Hospital. The general secretary is M. Charles Walther, Professor Agrégé at the Faculty of Medicine and surgeon to the Pitié Hospital. The three special subjects for discussion are: (1) surgery of the large venous trunks; (2) ways and means of access to the thoracic cavity from the point of view of operation; and (3) ectopy of the testicle and its complications. During the congress an exhibition of surgical instruments and of surgical dressings and the like will be on show, and show-cases will be provided for members of the congress for the purpose of exhibiting instruments or apparatus. The list of members of the congress includes a number of foreign surgeons as well as most of the French surgeons, and we are sorry to see that among the foreign surgeons those from our own country are in a decided minority. We regret this all the more inasmuch as those of our countrymen who have visited the congress always return with nothing but praise for it. The scientific side of the meeting is not interfered with by excess of hospitality, but such hospitality as there is is carried out with a grace, kindness, and thoroughness which our neighbours across the Channel know so well how to show. Possibly the date of the meeting being the first week in October makes it somewhat difficult for British surgeons to attend, but we hope in future that the names of British surgeons will be conspicuous in the list of members by something else than their absence.

SHOWER BATHS IN SCHOOLS.

AT a meeting of the Medical Officers of Schools Association held on June 14th Mr. Frederick Rose, a gentleman connected with the education department of the London County Council, read a paper on the Use of Shower Baths in Schools in England and on the Continent. In this paper, which has now appeared in pamphlet form,[1] Mr. Rose says that warm shower baths with soap, followed by a moderately cold douche, form the ideal system for cleansing and stimulating the bodies of school children. The cleansing process is more thorough than in any other practical system, the dirty water is instantly carried off, fresh water is constantly supplied, the danger of infection is obviated, and the physiological action of the water is rendered most effective. Slipper baths are out of the question for large numbers of children, being too slow, costly, and capable of conveying infection; the invigorating effect is, moreover, entirely wanting, as the bathing takes places in stagnant water at a constant temperature. Mr. Rose considers that all children in elementary schools should have at least one shower bath per week. The propagation of infectious diseases in schools would thereby be decreased and the habit of cleanliness once acquired would remain with most of the children throughout their lives. Shower baths have been adopted for schools in Germany, Austria, France, Switzerland, Belgium, Holland, Norway, and Sweden, but in the elementary schools of Great Britain and Ireland the only shower baths provided are four douches at the "Pulteney" School, Shaftesbury-avenue, London, presented to the school some years ago by the Hon. Dudley Campbell. In Bradford the swimming baths are supplied with a small number of douches and all persons are required to use them before entering the swimming pool but no system of shower baths has been introduced. Swimming instruction is given to school children in Edinburgh, Glasgow, and a few English provincial towns besides Bradford but shower baths are not provided. In Germany the circumstances are quite different. To quote only three cities, out of 283 elementary schools in Berlin 62 are provided with shower bath installations; of the 30 elementary schools in Frankfort-on-the-Main 26 have shower baths; and in Munich 35 out of 53 elementary schools have shower baths. In the German schools the shower baths are completely free and no compulsion is used. The bathing takes place during school hours, but generally not during the last hour, so as to diminish the possibility of chills being contracted. In some towns the children bathe with bathing garments, but in other towns without them. In some towns they bathe entirely in common; in other

[1] Extracts from the Annual Report of the Medical Officer of the Local Government Board for 1891–92. On Manure Nuisances, by H. F. Parsons, M.D. Eyre and Spottiswoode.

[1] London: J. and A. Churchill. Pp. 24. Price 1s.

towns a certain number of undressing and douching boxes are provided for the older children; and in a few towns, notably Cologne, separate undressing and douching boxes are provided for all children without exception. The average duration of a bath seems to be from 20 to 30 minutes; the showers are generally started at about blood heat and gradually reduced to a temperature varying from 55° to 70° F. As a rule the children stand in a large shallow trough during the douching operation and the douching itself is carried on either by means of single sprays to each child or by sprays which cast the water further apart and form a kind of rain. In the newer German public swimming baths no persons are allowed to enter the swimming pool without having previously soaped and washed themselves under the douches provided for this purpose. Mr. Rose states that the half hour devoted to shower baths per week has amply repaid itself in the improvement of the clothing and health of the children; it seems probable that it has also produced an increased capacity for learning, as well as some diminution of verminous conditions, skin diseases, and infection. In conclusion, he makes a variety of suggestions and estimates with respect to the construction and the use of school shower baths.

THE PREVENTION OF SMOKE IN LONDON AND IN PROVINCIAL TOWNS.

Is there any reason why certain provincial towns should apparently be exempt from that clause of the Public Health Act which provides that "any fireplace or furnace which does not as far as practicable consume the smoke arising from the combustible used in such fireplace or furnace and is used for working engines by steam or in any mill, factory, dyehouse, brewery, bakehouse, or gaswork, or in any manufacturing or trade process whatsoever" shall be deemed to be a nuisance liable to be dealt with summarily and a penalty imposed? Commendable work in the direction of abating the smoke nuisance in and around the metropolis has during recent years been done owing to the vigilance of our health authorities, who have been stirred to exercise their duty in this matter by the revelations published in THE LANCET and by the action also of the Coal Smoke Abatement Association under the presidency of Sir William Richmond. The condition of the London atmosphere has undoubtedly improved during recent years owing to a decided abatement of the smoke nuisance, and we utterly fail to understand why a similar improvement is not attempted in provincial towns and especially in those which are the centre of busy manufacturing areas. We may refer to Nottingham as a brilliant exception, for there, we believe, the lace manufacturers were compelled to abate the smoke nuisance purely in their own interest, for the smoke spoiled their goods. The shortening of lives by a compulsory existence in air intensely and constantly polluted with smoke is a much more serious matter than the spoiling of lace. The example of Nottingham is a splendid object lesson and proves absolutely that the smoke nuisance from factories need not be. Yet we still have "the black country" with us as smoke-besmirched as ever. The condition of the air between, say, Wolverhampton, to give one example, and Birmingham is a disgrace to any civilised community. Smoke of the filthiest description hangs as a dark pall for miles, absolutely shutting out the sun and the sky. Thousands of chimneys pour forth torrents of black smoke. "Torrents" is no exaggeration, while to say in the words of the Act that these chimneys send forth "black smoke in such quantity as to be a nuisance" conveys but the feeblest impression of the real state of affairs. Under this pall at intervening places like Dudley, Oldbury, West Bromwich, and elsewhere, thousands of work-people, men, women, and children, take their recreation, and it is pitiable to witness under what intensely impure conditions of the air these people attempt to preserve a healthy body. The pollution of the air is as much a scandal as the pollution of water and food, and the interference of the State is badly and instantly wanted in order that this wanton and wholesale defilement may be stopped. It would be idle to deny that this evil is a serious factor in the high rate of mortality which smoke-drenched districts commonly show.

FOREST FIRES IN SOUTHERN EUROPE.

WITHIN the zone bounded on the north by Grenoble and Toulon and on the south by Algiers, on the west by Logrono in Spain and on the east by Catanzaro in Italy, there have been, coincidently with the recent heat wave, a series of forest fires disastrous to all those countries, but more especially to Italy and Spain, where the problem of replanting the denuded hillsides is of clamant urgency. Reckless tree-felling in both peninsulas for carpentry in all its branches and not least for fuel has reduced immense tracts of territory to prairie or to what the Italians call "macchia"—that is, stunted forest growth, useful neither for timber nor for fuel, and rendering tillage or even pasture difficult and precarious. This fatal practice has been going on for centuries—changing the climate for the worse, rendering the rainfall uncertain, between autumnal inundations and summer droughts, circumscribing agriculture, and spoiling the amenity of the landscape. Spain was an early sinner and suffered in this respect, her timber becoming prematurely exhausted, so as even to restrict her ship-building and gradually to diminish, if not to extinguish, her mercantile marine. Italy has sinned and suffered still more—for this among other reasons that, having become for half a century the winter resort of the northern races with their craving for heating and fuel, she is exposed to a drain on her forest-growth from which other countries are exempt. The *Vox Urbis*, an able Latin journal published in Rome, devotes in its current number a leading article to the subject—"De Silvis Lege Tuendis"—and points out to Italy how sorely she needs "to take a leaf," literally so, out of the trans-Alpine book. While on her own side of the water-shed her rivers are gravel pits for ten months of the year, thanks to the excessive floods of the other two—in low water, so to say, after a "run on their own banks"—the corresponding streams on the Swiss side maintain a steady, equable flow, in summer as well as in winter, and this because of the wise law, stringently enforced throughout the Confederation, that no tree shall be felled without its replacement by the planting of another. By this means the conservation of moisture, its gradual, almost imperceptible, evaporation, and its no less gradual descent in showers, keep the rivers regularly supplied all the year round, not only preventing floods but turning the said rivers into agents for the development of electric energy and making their banks the seat of prosperous and multiplying factories of the steel and iron and other industries. Poor Italy, on the contrary, having no such law and, late in the day, beginning vigorously to enact, if feebly to enforce, an imitation of it, has the mortification of seeing her water-supply alternating between short-lived inundation and prolonged drought with all their disastrous consequences and, unkindest cut of all, the electric agency which, through Galvani and Volta, Nobili and Matteucci, she made known to the world, utilised by a rival power on the northern side of the watershed—taken out of her hands indeed—as an industrial and lucrative force, sorely as she needs new outlets for enterprise and sources of gain. Late in the day, we have said, has she awakened to her suicidal treatment of her woods and forests and now realises that, thanks to the floods that, in the autumn especially, devastate her hillsides and plains, the binding soil required

for replanting those hillsides is washed away and the task of reafforesting becomes next to impossible. Within living memory the Sabine range so conspicuous from Rome and so dear to the scholar for its associations with the Lucretilis and Ustica of Horace was waving with foliage, a welcome retreat in the dog-days, when—

> "..... Pastor umbras cum grege languido
> Rivumque fessus quaerit et horridi
> Dumeta Silvani, caretque
> Ripa vagis taciturna ventis."

Now, owing to the increased demand for fuel in the ever-multiplying hotels and *pensions*, that mountain slope is bare limestone, reduced to bed rock on which planting is impracticable. When reafforesting has thus become Italy's "prima cura," when every tree is precious and likely to become more so from the difficulty of replanting, we can understand the bitterness with which Italians read of woods on fire ("boschi in fiamme") in Liguria, in Calabria, even under the shadow of the Vatican itself, where many roods of plantation on the lower spurs of the Janiculars were the other day reduced to charcoal. Dr. Angelo Celli, professor of public hygiene in the Roman School, is, we are happy to see, "keeping at" the Government for the conservation of existing woods, the replenishment of those so sadly thinned, and the resuscitation of such as are no more. From his seat in Parliament he has extorted promise after promise from the Ministers of Agriculture and of Public Works that the legislation in this sense, so thorough in theory, should become as thoroughly efficacious in practice. Our sympathies are quite with him. Pity it were that the agitation for new ironclads and "destroyers" should override the young movement for reafforesting, that the clamour for quick-firing guns and field batteries of a novel type should drown the appeal of Hygieia, echoed by the wail of the Hamadryad.

PRESERVATIVES IN MILK.

THE Local Government Board for Scotland has issued to the clerks of local authorities a letter directing their attention to the subject of the addition of preservatives to milk. This matter was carefully considered by a departmental committee of the Local Government Board for England. In its report the committee stated that preservatives were objectionable on the ground of public health and were also unnecessary for the purposes of the milk trade. The Local Government Board for Scotland accordingly suggests that the local authority should cause samples of milk to be taken with a view to ascertain the presence of substances commonly in use as preservatives—e.g., formalin and boron substances. When such samples are forwarded to the analyst he should be informed of the purpose for which they have been taken. It is suggested that the local authority should first warn milk traders that action will be taken under the Sale of Food and Drugs Acts in instances where preservatives are reported in milk, and should thereafter, when the presence of any added preservative is reported in a sample of milk, regard the case as one for the institution of proceedings under these Acts. In some districts in England, action under Section 6 of the Sale of Food and Drugs Act, 1875, has been frequently and successfully taken in such cases, it being held that, when a purchaser asks for milk and is supplied with milk *plus* a preservative, he does not receive an article of the nature, substance, and quality demanded, and is prejudiced thereby. Vendors of milk may attempt to evade a prosecution by making a declaration that the milk contains some added preservative and the Board suggests the desirability of sampling in such cases. The nature of the declaration made should in all cases be carefully recorded by the officer taking the sample and should also be reported to the analyst when the sample is transmitted for analysis. Where preservatives are reported in milk thus sold the question will arise whether, in view of the nature and quantity of the preservatives added, it can be considered that the article has been rendered injurious to health, or that the purchaser has been prejudiced to an extent which would justify the institution of proceedings under Section 3 or Section 6 of the Sale of Food and Drugs Act, 1875, notwithstanding the declaration made at the time of the purchase. In this connexion the Board is advised that, as regards formalin and boron preservatives, the presence in milk of formalin to an amount that is ascertained by examination *within three days of collecting the sample* to exceed 1 part in 40,000 (1 part of formic aldehyde in 100,000) raises a strong presumption that the article has been rendered injurious to health and that the purchaser has been prejudiced in the above sense. Similar presumption is raised where boron preservatives are present in milk to an amount exceeding 57 parts of boric acid per 100,000, or 40 grains of boric acid per gallon. It is also suggested that the addition of preservatives to skimmed milk, separated milk, and condensed milk should be watched and controlled on similar lines. A similar letter was issued by the Local Government Board for England in July last and was referred to in an annotation in THE LANCET of July 21st, p. 173.

PHLEGMONOUS ENTERITIS.

PHLEGMONOUS gastritis is a very rare disease but phlegmonous enteritis is still rarer; only seven cases appear to have been recorded. In the *Johns Hopkins Hospital Bulletin* for August Professor W. G. MacCallum has reviewed the literature of the subject and reported the following case. A negro, aged 75 years, was taken to hospital complaining of pain in the abdomen and vomiting. Three weeks before he was struck by a car in the street and taken to hospital with a scalp wound. For a week he remained in hospital and complained of considerable abdominal pain. He returned home and appeared to be quite well until the day before his second admission, when he awoke with pain in the abdomen. On admission he indicated the site of pain as the right lower ribs, the epigastrium, and the left flank. Every few minutes he regurgitated without effort yellowish bile-stained fluid of a foul, faintly fæcal odour. He looked ill, the tongue was moist, and the lips were dry. The abdomen was full but not distended and there was bulging in the flanks. On deep palpation there was general tenderness which appeared to be slightly greater below the umbilicus. There was relative dulness in the left flank. Peristalsis was visible over the abdomen. The temperature was 100° F., the leucocytes were 24,000, and the urine contained albumin and numerous granular casts. Because of the signs of obstruction laparotomy was performed. On the left side of the abdomen was a slight excess of turbid fluid. The beginning of the jejunum was markedly thickened, had a brawny appearance, and was a little darker than the surrounding bowel. On palpation much enlarged rugæ could be felt. The serous covering was slightly injected, had lost some of its gloss, and showed a few fine flakes of fibrin. Death occurred on the following morning. At the necropsy the mucosa of the stomach was found everywhere thickened, studded with mushroom-like polypoid masses, and covered with thick mucus, and it showed abundant ecchymoses. Just below the pyloric ring were one or two small, irregular, punched-out ulcers. The intestine was greatly enlarged from a point about five centimetres below the pylorus for a distance of 30 or 35 centimetres. Its walls were much thickened so that it stood out as a stout rigid tube which abruptly was continuous with normal collapsed intestine. The lumen of the affected intestine was filled with a soft, yellowish-white, pasty, granular material. The mucosa was very pale and greyish white and showed a few minute hæmorrhages.

The valvulæ conniventes were opaque, swollen, and rigid. Sections of the affected intestine showed that the mucosa was practically normal but that the submucosa was extensively infiltrated. Its tissue elements were widely separated and isolated by an accumulation of fluid and leucocytes with a delicate network of fibrin. A similar condition was found in the muscular and subserous coats. The leucocytes were chiefly polymorphonuclear neutrophiles but some were mononuclears. Myriads of micrococci in chains were present, most of which were inclosed in the polymorphonuclear cells. There seemed little doubt that the organism was the streptococcus pyogenes. Cultures made with it unfortunately were lost. Askanazy has reported a similar case.[1] A man, aged 51 years, fell into a hole and injured his knee. He was disabled for several days during which he suffered from severe abdominal pain. After an indiscreet attempt to walk he became worse and he died 16 days after the accident. At the necropsy 50 cubic centimetres of thin purulent fluid were found in the peritoneum. The intestinal coils, especially those of the duodenum and jejunum, were greatly enlarged. The mucosa was greatly swollen, rather transparent, and grey, and the valvulæ conniventes were one centimetre high and their crests were in places brown and necrotic. Section showed purulent infiltration of the entire wall. In both cases it seemed that the injury affected the upper part of the intestine on account of its relatively fixed position, and thus predisposed to infection. In the other cases there was no history of injury. All the cases were rapidly fatal. The symptoms were those of intestinal obstruction which was due to paralysis of the affected intestine. Professor MacCallum suggests that enterostomy below the affected portion might at least relieve the symptoms of obstruction.

UNNECESSARY NOISES.

ON Sept. 17th at the West London police court a woman who carries on business as a butcher in Hammersmith-road was summoned by her neighbour, a watchmaker, for keeping a noisy animal, to wit, a cock. Mr. Ellis, who appeared for the complainant, stated that for some months his client's rest had been broken by the crowing of two cocks kept by the defendant. He had spoken and written to her but she only said that she did not hear the cocks and that his nerves must be wrong and that he must get used to it. The cocks had apparently been got rid of at the time of hearing and the magistrate therefore adjourned the summons *sine die* on the understanding that the annoyance was not repeated. His worship went on to say that if it were repeated he should inflict the full penalty for every day during which the nuisance had been committed which would amount to something like 50*s.* per diem. Nothing more deadly or destructive to health and nerve could well be conceived than perpetual cock-crowing. The complainant had acted very well in the matter and he was entitled to protection. In our opinion the strain of modern life in large towns is so great that all unnecessary noises should be strictly prohibited, and certainly we think that nobody should be allowed to keep fowls in a confined space, for where fowls do not have a good run they become practically a nuisance and their eggs are by no means wholesome. The subject of noises has recently been discussed by Dr. T. B. Hyslop at the recent meeting of the sanitary inspectors held at Blackpool. Dr. Hyslop was of opinion that legislation ought to be carried out against street cries and the use of horns, whistles, chimes, and signals. Some of these nuisances may be necessary but there can be no doubt about the unnecessary nuisance caused by motor omnibuses. In London at least the police have drawn up strict regulations which if carried out we may hope will diminish this class of nuisance. For instance, Clause 12 of the regulations states that the machinery should be so constructed that no undue noise or vibration is caused. It is not clear whether cars will be inspected after having once been licensed except as regards the question of smoke from the exhaust but there are a certain number of cars on the streets which certainly should be withdrawn for a time to allow the machinery to be renewed or to be refitted. For instance, we would draw the attention of the Commissioner of Police to a car numbered A 9134. It may have been already withdrawn for we have not seen it lately but when it was plying it made a noise which could only be compared to that made by a traction engine loaded with empty milk cans. Motor omnibuses are undeniably useful and have a great future before them but the proprietors should not be allowed to run cars which make singularly irritating and harmful noises.

[1] Centralblatt für Allgemeine Pathologie, Band vi.

CRIPPLED CHILDREN'S CHRISTMAS HAMPERS.

Alderman Sir William Treloar is now appealing to the benevolent for aid in carrying out his good work of sending Christmas hampers to several thousand crippled London children and His Majesty the King, who has year after year headed the subscription list, has already forwarded his customary donation. Subscriptions are therefore invited and may be sent as in previous years addressed to Alderman Treloar, 69, Ludgate-hill, London, E.C., and marked "Little Cripples' Christmas Fund." The main object of the Fund is to send a hamper of Christmas fare direct to the home of each crippled child in London whose state of health prevents participation in the entertainment given to Ragged School Children at the Guildhall. On the morning of this event the Lord Mayor and Sheriffs despatch from the Guildhall upwards of 7000 hampers to children who are on the Cripple Register of the Ragged School Union, each hamper containing enough good things to feed a family. The Fund usually provides a balance to be expended in artificial limbs, invalid chairs, and other requisites for the children.

MALARIAL FEVER CONTRACTED IN ENGLAND.

MALARIA disappeared from England many years ago since when contraction of the disease has been unknown. That such contraction is not impossible is shown by the following, apparently unique, case reported in the *Journal of the Royal Army Medical Corps* for August by Major R. J. Copeland, R.A.M.C., and Major F. Smith, R.A.M.C. A gunner of the Royal Garrison Artillery, aged 18 years, stationed in Clarence Barracks, Portsmouth, was admitted to hospital on June 12th with pyrexia and headache. He appeared to recover but after a day of apyrexia he had a rigor and his temperature again rose. Ultimately his chart showed a temperature typical of tertian ague, with rigors. There was also considerable enlargement of the spleen. Nevertheless, as the patient had never been out of England malarial fever was not suspected. But on June 16th examination of the blood showed tertian malarial parasites in abundance. Under quinine the fever disappeared in a week. Malarial fever was last described as prevalent in the army at home among soldiers stationed at Tilbury Fort in 1875. How did this gunner acquire it? The barracks in which he was stationed are new buildings in a large, dry, airy place and are not near any water except the sea. Careful search of the building which he occupied showed nothing to throw any light on the cause of the fever; there were no mosquitoes in the rooms and there was no standing water about. His room was occupied by over a dozen men. One of them had not long returned from abroad and was admitted into hospital on May 15th with tertian fever. On the 24th he was discharged and returned to his room. No other cases of

malaria occurred in the room. The dates suggest that he was the source of infection of the other soldier. But the men did not appear to have any particular communication with each other. Major Copeland and Major Smith suggest that the disease was conveyed by a flea or a bug. They also think that the case helps to explain the cause of some failures to stamp out malaria by destroying mosquitoes. This case would not have been diagnosed if the malarial parasite had not been found in the blood. It is therefore quite possible that other cases in which malaria was contracted in this country after it ceased to be indigenous may have been overlooked, as it is only in recent years that examination of the blood for the parasite has become general. Previously the fact that a patient had never been out of England would, as in the case now reported, have been thought sufficient to exclude malaria.

PATENT MEDICINE TRAFFIC.

THE figures which were recently published in THE LANCET showing the amount of duty paid on patent medicines in one year afford convincing proof of the magnitude of the business. It is instructive to calculate the face value of the medicines as represented by the value of stamps sold. The figures are as follows:—

Number of packages.	Full value per package.	Total face value.
31,322,832	1s. 1½d.	£1,761,909
7,222,432	2s. 9d.	631,963
1,154,092	4s. 6d.	259,670
134,357	11s.	73,896
14,808	22s.	16,288
12,625	33s.	20,831
Total ... 39,861,146	—	Total ... £2,764,557

The sale of patent medicines for the year under consideration averaged, therefore, more than one package for each inhabitant of this country, with a face value of over £2,750,000 sterling. This nefarious traffic will go on increasing so long as the majority of newspaper proprietors are untrammelled by legal restrictions and unfettered by principles. It is the unscrupulous newspaper proprietor who acts as the middleman, enabling the quack by misrepresentation and often by unmitigated fraud to take advantage of the ignorance and prejudice of the public.

ROTTEN EGGS AND THEIR USES.

AT the Thames police court on Sept. 19th summonses were heard against three separate defendants, bearing names suggestive of their Russian origin, all of whom were found guilty of similar offences and were fined respectively £8, £12, and £3, with costs in addition. They were bakers and the information against them was stated to have been given by rival traders. These were certainly justified in supplying it, for the three defendants in order to glaze their bread were in the habit of buying eggs which were the cheapest that they could obtain and unfit for human food. One of them was found to have upon his premises no less than three and a half gallons of liquid filth standing ready for use, and as this must be a large amount to be consumed in the manner indicated in one day it seems probable that some of it was destined to be kept for future occasions. It is a matter of frequent observation that people, educated and uneducated, associate a certain appearance in their food with good quality, and stipulate for the former while unable to detect the absence of the latter. Much of the adulteration of milk and of bread is due to an idea that milk ought to have a yellow tinge and that the whiter bread is the better it is also. The glazing on some pastry and on many kinds of fancy bread affords no evidence of richness or of any skill on the part of the maker but apparently, like the sugary glazing on some varieties of buns, it attracts. There is a conventional idea that the surface of rolls or pastry or buns should look brown and shiny and eggs in the case of an unsweetened article supply the varnish required. This may be perfectly harmless, but there are always bad eggs in the market to be bought at a very low rate compared with fresh ones, and the temptation to the needy and unscrupulous is obvious. It seems a pity that housekeepers should stipulate for appearances which in no circumstances can be of any value but which may lead to their buying food containing nasty and unwholesome ingredients.

DISINFECTION BY FORMALDEHYDE.

A VALUABLE contribution to the subject of disinfection by formaldehyde forms the substance of a paper by Mr. Daniel Base, of the Division of Pharmacology, Hygienic Laboratory, United States Public Health and Marine Hospital Service, which is published in the *Journal of the American Chemical Society* for August. The investigation was undertaken in order to determine the amount of formaldehyde gas given off into a room, specially designed for the purpose, from a definite volume of formalin by five well-known methods and to fix the relative values of these methods as to the yield of formaldehyde gas. The methods compared were: 1. The permanganate-formalin method, by which formalin is poured upon crystals of potassium permanganate; the reaction is completed in about five minutes. 2. The autoclave method whereby an autoclave is first charged with a definite mixture of formalin, glycerine, calcium chloride and water; the pressure is then raised to between 50 and 60 pounds, the cock is opened, and the ejection continued until the pressure falls to about 20 pounds; the pressure is then again raised and the process repeated so long as vapour continues to escape from the nozzle of the autoclave. 3. The sheet-spraying method, which simply consists in hanging up in a room two large sheets at an angle of about 45°, damping them and spraying them uniformly with a given quantity of formalin. 4. The Kühn lamp method, based on the generation of formaldehyde by the partial oxidation of methyl alcohol. 5. The Trenner-Lee retort method, by which formalin is simply heated to the boiling point in a retort in such a manner that the issuing formaldehyde gas and water vapour are passed into the room. The results obtained must be interpreted as representing the quantities of formaldehyde gas that may be expected to be present in a fairly air-tight room on a fairly still day, and after a certain interval of time which varies with the method used. According to the volume of formaldehyde yielded Mr. Base arranges the methods in the following order: (1) the Trenner-Lee retort method which gives the best yield; (2) the autoclave method; (3) the permanganate-formalin method in the proportion of 300 grammes of the salt to 600 cubic centimetres of formalin; (4) the sheet-spraying method; (5) a modification of (3), consisting in the addition of 300 cubic centimetres of water to 375 grammes of potassium permanganate and 600 cubic centimetres of formalin; and (6) the Kühn lamp method. For simplicity and expedition Mr. Base regards the permanganate-formalin method as preferable to all the others. The yield of formaldehyde gas can easily be increased by using larger quantities of materials. Although the sheet-spraying method does not give at any time so high a percentage of the gas it has the advantage that a uniform amount of gas is kept up for a long time. On the other hand, the modified permanganate-formalin method yields a constantly diminishing quantity of gas, which after five or six hours is less than is obtained by the sheet-spraying

method. By the autoclave method there is a loss of formaldehyde in the autoclave by polymerisation or decomposition. The Trenner-Lee retort method, although yielding appreciably more gas than the autoclave, requires more than twice the time to exhaust the apparatus. With the Kühn lamp the yield of formaldehyde is low; but this method possesses the merit of producing more moisture in the air of the room than the other methods described. This point is of importance, since it has been stated by M. von Brunn[1] and others that it is preferable nearly to saturate the air of the room with moisture in order to favour the condensation of formaldehyde on the various objects in the room. Mr. Base suggests that a greater degree of humidity in the air can readily be obtained with the permanganate-formalin method by using an ordinary tin or copper still. Finally Mr. Base quotes the conclusions of a recent experimenter[2] as to the practical requirements for an effective formaldehyde disinfection: (1) five grammes of formaldehyde (absolute) should be present in each cubic metre of space (0·1416 gramme per cubic foot), and should be allowed to act for seven hours; (2) the temperature of the room should not fall below 50° F., the best temperature being from 68° to 77° F.; and (3) the strength of the formalin should be ascertained.

"SAVOURY DUCK."

AT the recent conference of sanitary inspectors at Blackpool Mr. James McPhail, M.R.C.V.S., chief food inspector at Hull, read a paper in which he dwelt at length upon facts which had come under his notice bearing upon the desirability of universal public slaughter-houses. The point which he emphasised was that in the interest of the public health it is necessary not merely that there should be inspection but that every carcass slaughtered should be examined at a stage when the examination can be made complete and effective. When a number of private slaughter-houses are used daily this is impossible without a very large staff of inspectors, and when the inspection is not made immediately the most important part, the offal, can be removed from the carcass and dissociated from it, diseased portions can be excised, and articles of food destined to be bought by the humbler and less exacting members of the community can be placed upon the market, although in an unwholesome condition. The *Manchester Courier* thus summarises Mr. McPhail's account of the tricks of the butcher who caters for the poor:—"If a liver had an abscess in it the general way was to cut it out and use the remainder. Immature tape-worm cysts were called blebs. These were burst, but the heads, which developed into tape-worms, were allowed to remain. Livers loaded with hundreds of parasites, called flukes, were used, and sheep's lungs were the principal component part of that delicacy 'faggot,' or 'savoury duck,' or 'Yorkshire duck,' and those lungs, without exception, contain thousands of microscopic worms and their eggs. The working man who had not too much money to spend in his eating-house ordered his 'duck and potatoes.'" Allowing for deviations from the actual phraseology used by the speaker as may be due to the exigencies of an abbreviated report in a lay newspaper, we have here a forcible picture of the conditions under which the public are permitted, or rather are compelled, to purchase their food in spite of the maintenance of an expensive system of food inspection. The results, however, of their consumption of such articles of diet as those indicated are neither so immediate nor so readily traced to their source as to cause any urgent demand for reform on the part of those most affected. There are also the vested interests of the owners of the existing slaughter-houses to be considered whenever the reform takes place. Whatever may be the arguments for or against what is known as "municipal trading" we would suggest that it is at least as desirable in the public interest that, so far as it is possible, local authorities should own all the slaughter-houses as that they should embark upon schemes for tramways and electric lighting.

[1] Formaldehyddesinfektion durch Verdampfung verdünnten Formalins," Zeitschrift für Hygiene und Infectionskrankheiten, 30, 201 (1899).

[2] G. Werner: Zur Kritik der Formaldehyddesinfektion, Archiv für Hygiene, 50, 305 (1904).

ANCIENT INDIAN MEDICINE.

Dr. Rudolf Hoernle has published in the *Journal of the Royal Asiatic Society* some Studies in Ancient Indian Medicine, treating of all the known commentaries upon Susruta's great text-book on general medicine entitled "Ayurveda Samhita." At present only one of the commentaries on it—that by Dallana, written about the eleventh century—is complete. Dr. Hoernle quotes previous writers who are concerned with Dallana's work. Susruta's text-book was printed in 1889, and Dallana's treatise upon it in 1891, at Calcutta. The latter gives the names of fifteen of the books upon Ayurveda Samhita which he had consulted but Dr. Hoernle traces extracts from other authors of whose works copies still exist and incidentally throws great light upon the history of Indian medicine. One of the earliest of these writers of any importance he shows to have been Jaijata, who wrote perhaps before the seventh century and of whose work we have no copy, but doubtless many extracts from it are to be found in the voluminous scholia contained in the later Indian medical writers treating of Susruta. Next in value to Jaijata was Gayadasa who commented upon the whole of Susruta's great book. Some of his work is preserved. One portion, relating to his views upon Susruta's work upon pathology and anatomy, is in a newly-found manuscript described by Professor Cordier and also in another at Cambridge. Dr. Hoernle has examined and now treats of this codex which numbers 66 leaves. It is interesting because it proves that Gayadasa had before him a different text of Susruta from the version that Dallana knew. Dr. Hoernle's essay treats of the dates of the various writers and will be invaluable to all students of Sanscrit medical literature.

Dr. Leonard P. Mark will deliver the presidential address before the West London Medico Chirurgical Society at 8.30 on Friday, Oct. 5th. The subject will be Art and Medicine and the address will be illustrated by lantern slides of some pictures and works of art in British picture galleries and museums which are interesting from a medical point of view.

THE Registrar of the General Medical Council is directed to state for information that Sir Victor Horsley has written to the President resigning his seat on the Council in order that the inconvenience of a separate election next year may be avoided.

A TELEGRAM from the Governor of the Mauritius, received at the Colonial Office on Sept. 21st, states that for the week ending Sept. 20th there were 13 cases of plague and 7 deaths from the disease.

THE forty-seventh annual meeting of the New Sydenham Society will be held at 4.30 P.M. on Monday, Oct. 1st, at Mr. Jonathan Hutchinson's house, 15, Cavendish-square, London, W.

THE opening address of the winter session will be delivered before the West London Post-graduate College on Wednesday, Oct. 10th, at 4.30 P.M., by Mr. C. B.

Keetley, F.R.C.S. Eng., senior surgeon to the West London Hospital, at the hospital. Tea and coffee will be provided at 4 P.M. and after the address.

THE subject of the address of the incoming President (Mr. C. A. Ballance) before the Medical Society of London on Oct. 8th, at 8 P.M., will be "Then and Now in Surgery."

Mr. Obadiah Johnson, M.D. Edin., has been appointed an unofficial member of the Legislative Council of the Colony of Southern Nigeria.

Dr. James Macpherson Lawrie has been appointed Deputy-Lieutenant of the county of Dorset.

MEDICINE AND THE LAW.

Imprisonment for Debt.

PROBABLY a large number of Britons living in comfortable circumstances and not troubling themselves about the affairs of their humbler neighbours would tell an inquiring foreigner that imprisonment for debt was done away with long ago in these islands. They might, perhaps, add observations as to the physical and moral degradation which accompanied it, and illustrate them by reference to the fiction of Dickens, Thackeray, and other writers of the last century. As a matter of fact, however, or rather as a matter of law, a county court judge is given power to imprison debtors who do not obey his order to pay their creditors "when it is proved to the satisfaction of the court that the person making default either has or has had since the date of the order or judgment the means to pay the sum in respect of which he has made default, and has refused or neglected, or refuses or neglects, to pay the same." This has been the law since 1869. In 1875 4063 "judgment debtors" went to prison for various terms, in 1895 8190, and in 1905 11,405, and it must be remembered that these were consigned, not as debtors to a prison set apart for them, but to the ordinary gaol to which the pickpocket and the vagrant go. The increasing figures prove that a large number of persons are not afraid to incur debts which they will not be able to pay, and that the possibility of going to prison does not act as a deterrent to such as these. It is also notorious that the process of the court intended to be applied to those who wilfully disobey—those, in short, who can pay but will not—is abused; it becomes the means by which the "screw" is put upon persons who under its action can obtain money by borrowing it or by appealing to the sympathy of relatives better off than themselves. The system undoubtedly leads to lying and perjury in the county courts; it tends to demoralise those who go to prison and their families, whom they probably leave to go to the workhouse; it is costly to the public; and it benefits principally those persons who can use it as a method of terrorising their debtors. There are two sides to the question and the small trader requires protection from dishonest customers, but at the same time many contend with reason that the abolition of all imprisonment for debt, or its retention only for those cases where the debtor clearly and beyond question is defying the court, would have a beneficial effect on the community. It would cause cash payments to be insisted upon, or the exercise of self-denial on the part of the would-be purchaser, who in existing circumstances is tempted to increase his difficulties by purchasing upon credit. The committal to prison in a year of 11,000 persons who have committed no crime is a grave matter for medical men to contemplate, and a House of Commons in which the working man is largely represented should find time to give serious attention to the recently issued county court returns. Prison is prison whatever the reason may be which causes the detention; and in the long run many prisoners connotes many miserable homes, much privation, and much disease. The sequence is a fairly direct one.

THE GUILD OF ST. LUKE.—The customary annual service of the Guild of St. Luke will be held in St. Paul's Cathedral on Wednesday, Oct. 17th, at 7.30 P.M.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

City of Glasgow.—The population of this city, 809,986, is still the largest in the United Kingdom with the exception of that of London, and Dr. A. K. Chalmers makes good use of the material afforded him. During 1905 he endeavoured to investigate the food habits of 555 families (over 3000 persons) in whose households cases of infectious disease had occurred and, as was to have been anticipated, the results emphasised the enormous importance of educating the poorer classes as to the food values of the commoner articles of diet. Dr. Chalmers thinks that the establishment of food canteens in the poorer districts where substantial fare could be purchased at a reasonable cost would prove of great and immediate benefit and he thinks that the abuse of such establishments could be prevented by visiting the children at their homes. He points out that in the poorer parts of Glasgow there are many motherless families where the children's food is a succession of tea meals, with little variation, and with no trustworthy help available. In his inquiry he classified the diets into "good," "medium," and "bad," and it is interesting to observe the relations of the preponderating diet to the size of the dwelling. In the one-apartment dwellings the feeding was 27 per cent. good, 40 per cent. medium, and 33 per cent. bad, as against, in the two-apartment dwellings, 46 per cent. good, 44 per cent. medium, and 10 per cent. bad, while as regards the three-apartment dwellings the feeding was 71 per cent. good, 24 per cent. medium, and 5 per cent. bad. The canteen system is being at the present time largely patronised by the French and there is no doubt much to be said for it. But it is to be hoped that in addition the education authorities will see that the children in the schools are taught by a simple kindergarten system how to purchase the most nutritious meal for a given sum. In dealing with the statistics of Glasgow Dr. Chalmers points out that the estimation of the marriage-rate upon the population as a whole is likely to lead to very erroneous conclusions, and that the better method of stating the rate is in relation to the unmarried females and widows aged 15 years and upwards. When the rate is estimated on the whole population basis the decrease in Glasgow during the last 30 years was only 4 per cent., whereas a decrease of 16 per cent. is demonstrated by the other method. An instructive inquiry as regards pulmonary tuberculosis was undertaken in Glasgow during 1905 but we have no space to summarise it here. We may, however, quote some very sensible remarks made by Dr. Chalmers as regards the classification of cases. He says: "For administrative purposes some classification is necessary, but this must obviously have reference rather to the object in view than to the pathological condition present. It cannot be too frequently reiterated that the prevention of phthisis will only be accomplished by removal of the conditions which foster it. Phthisis prevails in our midst because of the low standard of housing we are still perforce compelled to accept. No provision of sanatoria for early cases, or of homes of rest for the very advanced, will in the least degree abate the necessity for keeping this steadfastly in view. Forms of individual relief are useful and valuable adjuncts. They may provide for the segregation of the actively infective or place the incipient case in the way of improvement, but the reduction of phthisis in the past has proceeded without organised help of either kind. With the modern views regarding the part played by sputum, and especially by droplet-infection, in spreading the disease, however, some supervision of the individual may reasonably be added; and the form which this supervision should take suggests the administrative classification necessary." There were during 1905 one death from anthrax and one from glanders, both in the human subject. In the case of anthrax the evidence pointed to infected meat of unknown origin as the possible source of the disease. Owing to a representation as to the quality of boneless meat which was forwarded to the corporation by the Scotch Local Government Board, it became necessary for Dr. Chalmers to ascertain, as far as practicable, how far the inspection of such meat was satisfactory and how far such meat was in point of fact wholesome. This involved a

somewhat elaborate inquiry into meat imported into Glasgow from Chicago, New Zealand, and the Argentine Republic. Dr. Chalmers was placed here in a somewhat impossible position and his summary was the only reasonable one. He has to admit that regulations for inspection exist in the three countries referred to and that "large quantities of boneless meat arrive in this country in a wholesome condition." He clearly recognises that it is impossible to conclude that the regulations are always enforced and, as regards this boneless meat, he points out that it fetches in the markets of this country a lower price than unboned meat imported as sides or quarters in a chilled or frozen condition. He adds that importers are not likely to take extra trouble for less remuneration and he offers the following alternative explanations of this anomaly: (*a*) That portions sent over as boneless meat are the less valuable cuts (under-cuts, bull beef, &c.) from the carcasses of quite healthy and well-fed animals; or (*b*) boneless meat is obtained originally from carcasses which do not yield first-class meat, by reason of emaciation, for instance. Although one person may hold one view and another another, Dr. Chalmers does not feel that the evidence available suffices for any dogmatic statements.

County Borough of Oldham.—There is evidence that in this district the schools were on sundry occasions instrumental in spreading small-pox, the type of the disease which prevailed being of a mild and anomalous character. Consequently, great difficulty was experienced in controlling the spread of the disease, which was sometimes intentionally regarded as varicella by the parents. In three of such instances summonses were issued and in one case the parent was fined the absurdly small amount of 5*s.*, the other two cases being dismissed. It was held that a householder could not be fined for failing to notify small-pox if he pleaded ignorance of the fact or regarded the disease as varicella, and though varicella was notifiable he could not be prosecuted for failure to notify a case if it happened to be small-pox. We quite agree with Dr. James B. Wilkinson that after a decision of this nature it was useless to take cases into court. With a view to curtail the spread of the disease two nurses experienced in small-pox were appointed to visit the schools affected, to examine the children, and afterwards to visit and to examine all the absentees from the school, and by this means several cases were brought to light which would otherwise have escaped notice.

County Borough of Stockport.—Dr. Meredith Young reports that although under the Midwives Act all midwives must notify to the local supervising authority all stillborn children delivered by them, he only received 22 such notifications during 1905. He has, however, grounds for believing that this figure only represents about one-fifth of the total which should have been received, seeing that during each year there are some 100 to 120 interred in the burial places within the borough. In Dr. Young's view there are midwives practising even now who either take good care to prevent any possibility of independent existence, or who cut short life when it has barely begun, the body being disposed of as that of a stillborn child. The only means of rendering this sort of thing impossible is to enact that no stillborn child shall be interred until it is certified by a medical man or a coroner's jury to be stillborn.

City of Kingston-upon-Hull.—A system of voluntary notification of pulmonary tuberculosis was introduced into Hull in the autumn of 1905 and the investigation of the notified cases is undertaken by the inspector of midwives. As regards midwives the following conditions were found amongst 64 who had applied for enrolment: Do not wear washing dresses, 67·1 per cent.; cannot read or write, 14·06 per cent.; over 65 years of age, 21·8 per cent.; very dirty habitually, 7·8 per cent.; without knowledge of antiseptics, 73·4 per cent.; and intemperate, 12·5 per cent. It is therefore encouraging to hear that the *bonâ-fide* midwives now practising are wearing washing dresses, using antiseptics, and carrying the appliances required by the rules of the Central Midwives Board.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8358 births and 5865 deaths were registered during the week ending Sept. 22nd. The annual rate of mortality in these towns, which had been equal to 22·3 and 21·1 per 1000 in the two preceding weeks, further declined last week to 19·3. During the first 12 weeks of the current quarter the death-rate in these towns averaged 16·1 per 1000, the rate during the same period in London did not exceed 15·4. The lowest death-rates in the 76 towns during the week under notice were 4·8 in Hornsey, 10·7 in Bury, 11·4 in Handsworth, and 11·5 in King's Norton; the rates in the other towns ranged upwards to 30·7 in Sunderland, 30·8 in Tynemouth, 32·0 in Burnley, and 33·9 in Warrington. The 5865 deaths in the 76 towns showed a further decline of 533 from the high numbers returned in the two preceding weeks, but included no fewer than 2012 which were referred to the principal epidemic diseases, against 2570 and 2531 in the two previous weeks; of these, so many as 1768 resulted from diarrhœa, while 68 were referred to diphtheria, 54 to whooping-cough, 51 to measles, 36 to "fever" (principally enteric), 35 to scarlet fever, and not one to small-pox. The deaths from these epidemic diseases were equal to a mean annual rate of 6·6 per 1000 in the 76 towns, while the rate did not exceed 4·5 in London. No death from any of these epidemic diseases was registered last week in Bournemouth, and the death-rate therefrom did not exceed 2·4 in Hornsey and 2·9 in King's Norton; whereas it ranged upwards in the other large towns to 14·0 in Gateshead, 14·3 in Warrington, 15·8 in Grimsby, and 16·5 in Hanley. The deaths referred to diarrhœa (mainly of infants under one year of age), which had been so many as 2342 and 2317 in the two preceding weeks, further declined last week to 1768; the highest annual rates from this disease during the week were 13·1 in Gateshead, 14·1 in Hanley, 14·3 in Warrington, and 15·8 in Grimsby. The fatal cases of diphtheria show a further increase upon recent weekly numbers, and included 19 in London, six in Salford, four each in Manchester and Hull, and three both in Southampton and Birmingham. Whooping-cough caused the highest death-rates in Sunderland and Hanley; measles in Oldham, Burnley, Wigan, and Norwich; and scarlet fever in Leyton and Rotherham. "Fever" (probably enteric) caused five deaths in West Ham, four in Sheffield, and three in Hull. No case of small-pox was under treatment in the Metropolitan Asylums hospitals during the week, no case of this disease having been admitted thereto since the end of June. The number of scarlet fever cases under treatment in the Metropolitan Asylums hospitals and in the London Fever Hospital, which had been 3042, 3067, and 3075 on the three preceding Saturdays, further rose to 3164 at the end of the week under notice; 473 new cases were admitted to these hospitals during the week, against 317, 415, and 440 in the three previous weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 143 and 105 in the two previous weeks, rose last week to 149, and exceeded by three the corrected average in the corresponding week of the four preceding years, 1902–05. The causes of 46, or 0·8 per cent., of the deaths registered in the 76 towns during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Birmingham, Leeds, West Ham, Newcastle-upon-Tyne, and in 49 other large towns; the proportion of uncertified deaths showed, however, a considerable excess in Liverpool, Rotherham, Gateshead, and Preston.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had steadily increased in the four preceding weeks from 13·8 to 16·8 per 1000, declined to 16·1 in the week ending Sept. 22nd and was no less than 3·2 below the mean rate during the same week in the 76 English towns. The rates in the eight Scotch towns ranged from 10·6 and 12·2 in Perth and Aberdeen to 18·3 in Leith and 21·6 in Paisley. The 552 deaths in the eight towns showed a decline of 24 from the number in the previous week, and included 122 which were referred to the principal epidemic diseases, against 80, 85, and 136 in the three preceding weeks. These 122 deaths were equal to an annual rate of 3·6 per 1000, which was 3·0 below the rate from the same diseases in the 76 English towns. Of these 122 deaths, 87 resulted from diarrhœa, 11 from "fever," ten from whooping-cough, eight from diphtheria, five from measles, one from scarlet fever, and not one from small-pox. The deaths referred to diarrhœa in the Scotch towns, which had been 48, 62, and 104 in the three preceding weeks, declined again to 87 in the week under notice; they included 51

in Glasgow, 12 in Edinburgh, eight in Paisley, six in Leith, four in Dundee, and three in Greenock. Of the 11 fatal cases of "fever" seven occurred in Glasgow, two in Dundee, and one each in Edinburgh and Leith; four of the seven in Glasgow, one of the two in Dundee, and the case in Edinburgh were certified as cerebro-spinal meningitis. Of the ten deaths from whooping-cough, seven were returned in Glasgow and two in Aberdeen; and the eight fatal cases of diphtheria included three in Glasgow, and two both in Edinburgh and Aberdeen. Measles also caused three deaths in Glasgow. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 50 and 58 in the two preceding weeks, further rose to 66 in the week under notice, and exceeded by ten the number returned in the corresponding week of last year. The causes of 19, or 3·4 per cent., of the deaths registered during the week were not certified; the mean proportion of uncertified deaths in the 76 English towns during the same week did not exceed 0·8 per cent.

HEALTH OF DUBLIN.

The annual death-rate in Dublin, which had steadily increased in the seven preceding weeks from 16·8 to 29·4 per 1000, declined to 26·8 during the week ending Sept. 22nd. During the first 12 weeks of the current quarter the death-rate in the city averaged 21·2 per 1000, the mean rate during the same period being only 15·4 in London and 13·0 in Edinburgh. The 195 deaths of Dublin residents during the week under notice showed a decline of 19 from the high number in the previous week, and included 39 which were referred to the principal epidemic diseases, against 52 and 43 in the two preceding weeks; these 39 deaths were equal to an annual rate of 5·4 per 1000, the death-rate during the week from the same diseases being 4·5 in London and only 2·6 in Edinburgh. Of these 39 deaths no fewer than 34 were referred to diarrhœa (against 49 and 39 in the two preceding weeks), two to "fever," one each to measles, scarlet fever, and whooping-cough, and not one either to small-pox or diphtheria. The deaths both of infants and of elderly persons showed a decline from the high numbers in the previous week. Seven inquest cases and five deaths from violence were registered; and 52, or 26·7 per cent., of the deaths occurred in public institutions. The causes of nine, or 4·6 per cent., of the deaths registered during the week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointment is notified:—Staff Surgeon A. R. Bankart, lent for three months' study at London Hospital.

ROYAL ARMY MEDICAL CORPS.

Major G. L. Foster, of the Canadian Army Medical Corps, has been attached to the Depôt at Aldershot for a course of instruction. Captain B. Watts is directed to proceed to Fermoy for charge of the Military Families Hospital, vice Captain H. G. Martin. The following officers, now attached to the Aldershot Army Corps, have been selected for service in India:—Lieutenant-Colonel T. J. R. Lucas, C.B., Lieutenant-Colonel H. P. G. Elkington, Lieutenant J. S. Dunne, and Major H. S. Peeke.

ARMY MEDICAL RESERVE OF OFFICERS.

The undermentioned Surgeon-Lieutenants to be Surgeon-Captain:—Robert A. Draper (dated Sept. 14th, 1906) and Reginald C. Gayer (dated Sept. 17th, 1906).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st West Riding of Yorkshire: John Nightingale (late Captain) to be Surgeon-Captain (dated Jan. 20th, 1906).

Rifle: 2nd Volunteer Battalion the King's Liverpool Regiment: William Henry Broad to be Surgeon-Lieutenant (dated Sept. 22nd, 1906). 3rd Volunteer Battalion the Lancashire Fusiliers: Wilfred Moritz Steinthal, late Captain, Northern Command, Manchester Companies, Royal Army Medical Corps (Volunteers), to be Surgeon-Captain (dated Sept. 22nd, 1906).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Lancaster and Border Bearer Company: Captain W. B. Cockill to be Major (dated Sept. 22nd, 1906).

DEATHS IN THE SERVICES.

Major Thomas Birt, R.A.M.C., on Sept. 19th at Reading. He entered the service in 1887 and served with the Chitral Relief Force under Sir Robert Low in 1895 (medal with clasp). He was promoted to major in 1899.

Surgeon Herbert Bartlett Simpson, R.N., recently at Ceylon from enteric fever. The deceased officer, who was only in his twenty-ninth year, had served for some time at the Royal Naval Hospital, Stonehouse (Plymouth).

FRESH MEAT IN THE NAVY.

The determination has been arrived at by the Admiralty to slaughter pigs at the Royal William Victualling Yard, Stonehouse (Plymouth), for the supply of fresh pork to ships in the port. Pens and slaughter-houses and all the appurtenances are to be erected in the yard for this purpose. The pigs will be supplied by contract but the slaughtering will be done under official supervision. The Admiralty has also called for a report on the best means of supplying victuals to ships within reasonable distance of the port of Plymouth.

EXPENDITURE OF ARMY ALLOWANCES IN INDIA.

Lord Kitchener has issued an order dealing with military expenditure, in which he points out that heavy waste of the public funds occurs through officers of all ranks spending budget allotments at a forced pace towards the end of each financial year in order to prevent the allotments from lapsing. The Commander-in-Chief forbids this hurried squandering of unspent balances.

Correspondence.

"Audi alteram partem."

THE ELECTRICAL RESISTANCE OF THE BLOOD AND URINE AS A TEST OF THE FUNCTIONAL EFFICIENCY OF THE KIDNEY.

To the Editors of THE LANCET.

SIRS,—I am grateful to Mr. T. M. Wilson for calling my attention in THE LANCET of Sept. 8th, p. 682, to the fact that the electrical resistance of the blood does not depend solely upon the salts present, but also upon the proportion of the total volume of the blood which is occupied by corpuscles. I was, of course, aware from experiments made by me on artificial urines prior to 1892[1] that the presence of non-electrolytes such as sugar and albumin would slightly increase the resistance, but this effect can for practical clinical purposes be disregarded in the presence of the dominating influence of the salts. I must also express my thanks to Mr. Wilson for drawing my attention to his conductivity measurements and freezing-point observations on blood and serum in pernicious anæmia and other diseases. He confirms, I am pleased to see, the observation I made a number of years ago[2] as to the increased conductivity of the blood in pernicious anæmia, but he disagrees with me as to the cause. Whether this increased conductivity be due to the diminution in the corpuscles, or to the increase in the salts, or to both, it is of importance in throwing light on the pathology of the disease.

Much more, however, can be learned as to the renal efficiency by ascertaining the ratio which I have termed "the hæmo-renal salt index"—namely, by comparing the electrical resistance of the blood of a patient to the electrical resistance of his urine, taken at one and the same time. Thus, in pernicious anæmia the index is only a fraction of what it is in health, due to the diminished resistance of the blood and the increased resistance of the urine. Dr. F. G. Hopkins[3] found a marked diminution in the salts of the urine in five cases of pernicious anæmia. But it will be chiefly in surgical affections of the kidney that the method will be in combination with cryoscopy of use in ascertaining the renal capacity. I append the notes of a case under the care of Dr. H. Alexis Thomson of tuberculous kidney; the secretions were examined for me by Dr. A. C. T. Woodward. The resistance of the blood was very high and amounted

[1] Proceedings of the Royal Society of Edinburgh, Dec. 21st, 1891.
[2] Manual of Practical Medical Electricity, fourth edition, chapter on Electrical Diagnosis; also Nature, July 13th, 1899.
[3] Guy's Hospital Reports, 1891-1892.

to 153 ohms; the resistance of the urine (not coloured blue) segregated from the left diseased kidney amounted to 93·5 ohms, or more than double the average normal resistance. The resistance of the urine (coloured blue) segregated from the right healthy kidney was 62·9. The hæmo-renal salt index of the diseased kidney was $\frac{153}{93\cdot5} = 1\cdot6$. The hæmo-renal salt index of the healthy kidney was $\frac{153}{62\cdot9} = 2\cdot4$. No allowance has, however, been made for the different rates of secretion of the two kidneys; had this been taken into account there might have been a much greater difference. The result, however, shows that the hæmo-renal index of the diseased kidney was below the normal—viz., 1·6 instead of 2—while the index of the healthy kidney was quite up to or even above the normal—namely, 2·4 instead of 2, because it was taking on some of the work of its fellow. No doubt more accurate information as to the salt concentration of the blood could be obtained by separating the serum, but this would be difficult when dealing with the very small quantity of blood and of urine—viz., five cubic millimetres—which is all I require to draw from a patient in order to measure the ratio I have termed the hæmo-renal salt index.

I am, Sirs, yours faithfully,

Edinburgh, Sept. 22nd, 1906. DAWSON F. D. TURNER.

THE PRESENT METHODS OF UTERINE DILATATION.

To the Editors of THE LANCET.

SIRS,—The ordinary student of our recent literature on this subject will at once discard the use of tents in favour of forcible methods. Let us see if this should be so. First, tents are not packed with even ordinary antiseptic precautions, and before use may have been handled by salesmen and would-be purchasers many times. In our text-books their dangers are referred to but no methods suggested of avoiding them. The method I use is to keep the tents in an absolute alcoholic solution of biniodide of mercury (1 in 200). This does not cause them to swell and renders them as safe to leave in the cervical canal as iodoform gauze. In the case of the tent being liable to leave fragments behind, as in sponge tents, the tent should first be wrapped or encased in iodoform gauze by which means none can be left and the gauze being loose laterally allows the tent to fully expand. Should there be a possibly difficult removal owing to constriction at the inner os several fine laminaria tents are preferable to one large one. It will then be found much easier to remove them, especially if they are left in 24 hours or more. Instead of using expensive tent introducers the vaginal forceps used by every surgeon will be found most serviceable, for after half an inch or more of the tent has been introduced into the cervix the tent can be released and thrust on by pressure at the end. By this means it will find it own way in a tortuous canal much better than when held rigidly in an ordinary introducer. As a rule tents can be introduced without chloroform or other anæsthetic and the saving of time at the subsequent operation is invaluable. Having watched prominent surgeons trying forcibly to dilate in a short time a rigid os, using vulsella to keep down the os whilst Hegars were thrust into it often causing the vulsella to tear their way out, perhaps with a bit of cervix still adherent, I have felt very much in favour of the old tents but used in accordance with up-to-date antiseptics. The vagina can be tightly packed with iodoform gauze after introduction should there be danger of the tents slipping out, but if not I prefer not to pack the vagina at all. I have just removed by the cervix an intrauterine fibroid polypus some three inches in diameter (in pieces), dilatation being procured by tents and gauze previously to operation and the os is now intact and the patient in good health. I could not have had this result by any other method I have seen and the patient was quite run down previously by continuous hæmorrhage, rendering an abdominal operation not desirable to the patient or operator. The best antiseptic solution for keeping instruments in both previously to, and during, operation that I have found is common washing soda and boiled water. The instruments can remain in it indefinitely without injury and are ready for instant use. This does not apply to aluminium, which is injured by soda. I consider that every army corps should have its surgical instruments kept permanently in metal cases full of soda solution. No boiling previously to operation would be necessary.

I am, Sirs, yours faithfully,

THOMAS HODGSON, M.B., Ch.B.

Fitzroy, Victoria, July 21st, 1906.

TYPHOID FEVER AND CANCER.

To the Editors of THE LANCET.

SIRS,—Has there been any case of death from cancer within seven years of an attack of typhoid fever? Is not cancer so extremely rare among typhoid fever cases of recent date, too rare for the age incidence to be a sufficient reason, as to call for an inquiry into something which could *possibly* be a point of connexion between the two diseases? The discovery of any such point of connexion might throw some light on the cause of cancer. Our position as a profession will be indeed singular if we are compelled to admit that cancer abstains from attacking those who have recently suffered from typhoid fever and we are not able to give any reason for it. I am, Sirs, yours faithfully,

WILLIAM ROPER, M.A. Oxon., L.R.C.P., L.R.C.S. Edin.

Bridport, Sept. 13th, 1906.

THE PSYCHOLOGY OF THE SELFISH MOTORIST.

To the Editors of THE LANCET.

SIRS,—Your annotation on the above subject in THE LANCET of Sept. 8th misses the true cause of the troubles you suggest as being possibly due to the advent of the automobile—I refer to the dust. Now the dust was on the roads long before the automobile and was stirred up by strong winds and horse traffic, and through the latter became excrement-bearing dust. The roads of England are in much the same condition as they were one hundred years ago and the repairs to the roads—viz., rolling mud into loose stones "to make it bind"—cause in dry weather the blinding dust which is raised by winds and all traffic. Let the new vehicle be taxed judiciously by all means and the proceeds of the tax applied to a modern and dustless method of road-making, then, with the disappearance of horse traffic and the general adoption of the automobile we shall hear no more of "fæcal dust" and dust-borne infections. It must be borne in mind that the automobile is a boon to the medical man both in town and country and has been generally adopted by the profession both in England and abroad, and I think that all our efforts should be directed to the improvement in road-making. The selfish automobilist is with us and always will be, and so is the selfish horse driver, and I always rejoice to see the former punished, but, I regret to say, the latter usually comes off scot free.

I am, Sirs, yours faithfully,

Plymouth, Sept. 18th, 1906. GEORGE F. ALDOUS.

GOATS' MILK FOR INFANTS.

To the Editors of THE LANCET.

SIRS,—With reference to your annotation on the above subject in THE LANCET of August 25th the following quotations from "Climate and Health in Hot Countries," by Lieutenant-Colonel G. M. J. Giles, I.M.S., may be of interest:—

> Goats are extremely hardy and, being naturally clean feeders, require far less attention than cows, while the flavour of their milk in tea is preferred by many to that of cows' milk. They stand marching well, too, and are therefore better suited for use in camp, and as their favourite food is the leaves of bushes they may be trusted to find their living to a great extent as they trot along on their way from camp to camp. Usually their milk agrees excellently with infants, but there can be little doubt that asses' milk is superior for this purpose. (P. 50.)
>
> Goats' milk requires somewhat less dilution than that of the cow and may agree in cases where cows' milk fails. (P. 76.)
>
> Asses' milk is probably the best substitute for an infant's natural food, and failing this goats' milk is to be preferred to that from the cow. (P. 152.)

Such strong expressions of opinion from an officer with almost unrivalled tropical experience should go far to settle the somewhat vexed question of the suitability or otherwise of goats' milk as a food for infants. Since writing my communication on the subject one officer informs me that his child was brought up entirely on goats' milk in the island of Jamaica, a second writer that goats' milk is largely used for

feeding infants at Gibraltar, and the wife of a third gentleman tells me that her eldest son was fed entirely on goats' milk while in India as cows' milk did not agree with him.

Personally I am strongly of Colonel Giles's opinion that the milk of a "clean feeder" is much more desirable than that of an animal which occasionally finds its nutriment in village rubbish heaps. If Indian mothers realised that "when pressed by hunger there is no fouler feeder than a cow, and it is a dismal fact that, in the polity of an Indian village, the cattle rival the pigs in their efficiency as scavengers," they would, when travelling about and unable to keep a cow of their own, prefer the milk of the goat to that of the cow as food for their infants.

I am collecting opinions from my colleagues with tropical experience and making a few experiments and hope to submit a report later, but in the meantime I would esteem it a favour if the readers of this journal would favour us with their views on this very important detail of infant hygiene.

I am, Sirs, yours faithfully,

ROBERT J. BLACKHAM, D.P.H. R.C.P.S. Lond.,
Captain, R.A.M.C.

Military Families' Hospital, Devonport, Sept. 21st, 1906.

WHAT IS A SPECIALIST?

To the Editors of THE LANCET.

SIRS,—In the days when Imperial Liberalism was a political factor I remember a discursive speaker being described as one who could talk on everything, "from Rosebery and current topics to raspberry-and-currant tart." Some of your correspondents have shown similar discursiveness, and I use this as an excuse for introducing some new facts to the notice of the medical public which may not seem strictly germane to the present discussion. It may be added, however, that when the subject of a correspondence is the search for a definition there can be no certain limits to the matters dealt with.

The word "specialist" is used by some of the public and by most medical men to imply a man who has special knowledge of some very distinct branch of medicine and surgery, and to obtain this knowledge he must possess very distinct opportunities. Thus a man can be called a specialist who has unusual opportunities for observing and treating diseases of the eye or the ear, of the throat or the nose. Apparatus is designed to help him in diagnosis the full utility of which can only be obtained in practised hands, or estimated by practised observation. He must have many patients before he can acquire familiarity with the particular points of his specialty, and, roughly speaking, he can only get his material by being attached to a hospital. This fact has unfortunately led many members of the public to suppose that being attached to a hospital and being a specialist are synonymous terms. A letter in your issue of Sept. 8th, p. 673, from Dr. Francis Hawkins shows that he shares this opinion, and he is probably not alone among consulting medical men. In this view only one class of medical man should attain to the rank of a hospital surgeon or a hospital physician, and it will be the duty of those members of the medical profession who are in a lower sphere to feed this superior class, sending them all cases the treatment of which is not perfunctory, and inviting their aid at all operations which would not fall naturally within the scope of a house surgeon. What I want to bring out is this. Firstly the general practitioner, in the ordinary course of his duties, will not become a specialist—say—in diseases of the ear. He will not see enough aural cases to enable him to group them into divisions and subdivisions for purposes of diagnosis and prognosis; he need not pretend to have familiarity with delicate operative procedures. But, secondly, he will see enough cases of pneumonia, of pathological developments following zymotics, or of complicated labours to give him a special knowledge in such situations, if he spends a special amount of time pondering the natural and other phenomena and brings a special amount of intelligence and investigating method to bear upon the symptoms. Such an expert general practitioner may be just as much possessed of individual and particular knowledge as the physician-anæsthetist or the ophthalmic surgeon to a hospital. Therefore, I can see no reason whatever why he should not assume, when he chooses, the position of specialist or consultant. If the members of the public go straight to him no harm will be done, for he is a practically learned man; on the other hand, his colleagues, especially those junior to him in the general ranks of the profession, might often like to consult one possessing this valuable and hardly earned kind of experience.

The interesting correspondence which has been running in your columns under this heading was started, if I remember rightly, by the question whether a general practitioner, desiring to pass into consultant or specialist ranks, could indicate the same in any way on his door-plate. The question has not been answered, but I do not see why he should not be allowed to do so

I am, Sirs, yours faithfully,

M.B., B.C.

THE VACANCY ON THE SENATE OF THE UNIVERSITY OF LONDON.

To the Editors of THE LANCET.

SIRS,—In a short time members of Convocation of the University of London will receive voting papers for the election of a senator. There is now an excellent opportunity for graduates to show their disapprobation of the methods by which it is sought to increase the number of men who hold the degrees of the University. The rational method of obtaining this end would be to increase the efficiency of the teaching so that the border line man would find himself on the right side of the pass-list; the actual method adopted has been to reduce the stringency of the examinations. The reason is not far to seek. London medical schools have felt severely the competition of the provincial schools and have conceived the idea of attracting more students by the lure of an easily obtainable degree at the University. They are aware that in the provinces the London degrees are held in great estimation but they are unable to realise that the cheapening of the degree is accompanied by a corresponding drop in value in the eyes of the men whom they would attract. I say nothing of the breach of faith with those of us who took the degrees before the *débâcle*. That is sufficiently rankling to need no spur at the present time.

Now of the candidates for the seat on the Senate Dr. Graham Little is frankly and freely hostile to the policy that would reduce our degree to the level of the second rate. Dr. Frederick Taylor, on the other hand, approves of the action of the Senate in the recent changes and, what is more significant, is supported by many of the teaching staff of the London schools. We want no more tinkering with our degrees. The futile juggling with "internal" and "external" students revealed to many the hopelessly chaotic state into which the governing minds had drifted at the time of the great change. As an instance, I was registered as an internal student of medicine the year before I took my M.D. On receiving notice that I was to receive a certificate for that degree as "an external student" I wrote to say that I was registered as an "internal" student, so that the classification was wrong. In reply I was told that the distinction into the two classes had not existed long enough to enable a student to take his doctorate "internally" and therefore I was external. The delightful clearness of this bit of reasoning led me to write again saying that I did not want either their internal or external certificate. I wanted the old certificate of the University of London. But I did not get it. I received an "internal" certificate after all. But a fellow M.D of the same hospital, the same year, and passing the same time, had to accept an external paper.

Let us return Dr. Graham Little to the Senate and follow it up by selecting similar men for each succeeding vacancy. Enough mischief has already been done to our famous university.

I am, Sirs, yours faithfully,

Sept. 24th, 1906. M.D. LOND.

HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET, LONDON.—The winter session of lectures and demonstrations at this hospital will commence on Oct. 4th at 4 P.M. and will be continued on succeeding Thursday afternoons at the same hour. The lectures are free to medical practitioners. The opening lecture will be given by Dr. A. E Garrod on Some General Considerations of Disease as it Occurs in Children, and on Oct 11th Dr. T. Thompson will lecture on Juvenile Asthma and its Treatment. Inquiries respecting these lectures should be addressed to the dean of the medical classes at the hospital, Dr. A. F. Voelcker.

THE GIBRALTAR WATER-SUPPLY.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

AFTER the Fourteenth International Congress of Medicine held at Madrid in 1903 I managed to visit both Gibraltar and Tangier. When a few months ago the Fifteenth International Congress of Medicine met at Lisbon I again profited by the comparative proximity to contemplate once more what the ancients described as the pillars of Hercules. The interest that both these places excite is unfailing though of so different a nature. For Gibraltar the British patriot feels the full glow of pride, though the last time I was there I met a German officer who was making a pilgrimage to the great fortress to see the place where, as he put it, Hanoverian regiments had immortalised themselves in defending this possession of their Hanoverian king. For my part, I view with no less pride the victories won at Gibraltar by the science of hygiene in the saving of human life. During the ten years 1881–90 the average annual death-rate was 23 0 per 1000 of the population. During the next ten years the annual average was 20·65 per 1000. From 1881–90 the average annual "zymotic" death-rate was 4·93 per 1000 and from 1891 to 1900 it had fallen to 2·79 per 1000. In former days Gibraltar was subject to terrible epidemics and in 1804 no less than 5733 persons died from fever in a few weeks out of a population of about 15,000. On the other hand, in 1885, when the terrible cholera epidemic devastated the surrounding country and in spite of the fact that thousands of Spanish labourers and others came into Gibraltar to work for the day, returning to Spain at sunset, there were only 34 cases and 25 deaths from cholera at Gibraltar.

The census of 1901 showed that the population of Gibraltar then numbered 27,460, including 6475 soldiers. But to this must be added a large amount of shipping and a great number of passengers who land, some only for a few hours, others for a few days. This, especially the shipping, increases the greatest difficulty that besets the fortress and town of Gibraltar. Considering that Gibraltar is a precipitous limestone rock jutting out into the sea there can be no natural water-supply. There are wells certainly at the foot of the perpendicular cliff which constitutes the most formidable feature of the North Front. The moment, however, any quantity of fresh water is drawn from these wells it is replaced by the salt water that comes filtering in from the sea which is so near on both sides of this narrow peninsula. Nevertheless, and though this water is brackish, it has very greatly contributed to preserve the health of the town. It is not fit to drink but it has rendered the creation of a system of drainage possible. Triple expansion engines have been placed at the North Front. These pump up some 200 000,000 gallons of this water to an altitude of 250 feet into reservoirs near the old Moorish Castle and to some other minor reservoirs on the Europa road. At the latter point another pump raises a portion of this water to a height of 535 feet. By these means it has been possible to lay mains and to deliver by gravitation water to all the dwellings at Gibraltar. This water is too salt to drink but it provides ample means for flushing house drains and public sewers, for watering and cleansing streets and yards, and for extinguishing fires. It is called the sanitary supply and great has been the service it has rendered to the cause of sanitation.

Till 1868 the inhabitants had no other water to drink than the rain water collected for the most part on the roofs of the houses. Well digging was not successful; if the water was not brackish it was often impure. The rainfall, however, is uncertain and when water is most needed there is no rain. In summer the heat is more oppressive than might be imagined by the mere reading of the thermometer. This is due to the stagnation of the air resulting from the shelter which the high rock affords. Yet in winter the north wind, which fortunately is very rare, brings from the snow-clad mountains biting cold. Though snow is almost unknown, there are hail storms. From 1790 to 1901, during 111 years that a record has been kept, the average annual rainfall has been 33 33 inches. The most rainy months were November with an average of 5·70 inches, and December with 5·57 inches. Then follow January, February, and March. Barely half an inch falls in June, July, and August, while in May and September the rainfall is under two inches. The highest fall in one day was on Dec. 14th, 1796, when it amounted to 9·13 inches. The highest record for rain during an entire year was that of 1855–56, when 77·14 inches fell; the lowest was in 1800–01 when only 15·12 inches of rain were recorded. It will be seen by these figures that it is a hazardous matter to depend upon the rainfall for a water-supply. During 1884, however, in the Southport Ditch, near the Ragged Staff, condensing machinery, which, if I remember correctly, had been used during the Abyssinian campaign, was erected. These condensers could distil 650 000 gallons of salt water per month. The water thus freed from salt and sold for drinking purposes to the inhabitants was of help in keeping the cholera at bay during the great epidemic which occurred in the following year.

Shortly after this first attempt on a large scale to secure a public supply of drinking water efforts were made to collect water on the slope of the rock. In 1898 an area of 14½ acres was especially prepared for this purpose. The fissures and indentations in the rock were filled up and the surface was concreted so as to make a clean, smooth catchment ground. Then great reservoirs were dug deep into the rock and so far within the mountain as to be not only bomb-proof but at such a distance from the surface as to assure that the water should remain at the same temperature whatever outside variations may occur Here the water is preserved underground, as in nature, only at a higher level, so that it can be distributed to the habitations below by the force of gravitation. The reservoirs thus built have a capacity of 5,000,000 gallons. These I visited and described after the Madrid Congress of 1903 There are four reservoirs, each holding 1,250,000 gallons, so that while the water is being taken from one it is allowed to settle in the others. When these great works were first undertaken the question was raised as to whether it would be possible to sell the water. To-day the complaint is made that the water sells too readily, that the demand is so great that the inhabitants cannot get what they urgently need.

The result was that a much larger scheme was prepared by Mr. William Wallace Copland, the secretary and engineer of the Sanitary Commissioners. This scheme I fully described three years ago, but to-day the tunnel is completed and I was able to go right through in a little truck on rails which, entering near the Moorish Castle and emerging high above Catalan Bay, seemed to pierce the rock like a needle. A smooth sand-slide that slopes from the rock above Catalan Bay, that is, on the Mediterranean side, has, to the extent of 40 acres, been covered over with corrugated iron and forms a splendid catchment ground for rain water. But a tunnel had to be pierced so as to convey this water over to the Atlantic side of the rock, where Gibraltar is situated. The tunnel is really a wonderful construction. It has been pierced 20 feet above the reservoirs; it is seven feet high and ten feet broad. On one side there is a passage three feet broad with a rail so that trucks can be wheeled through from end to end. The remaining seven feet in the width hold an open channel or culvert where the water passes but over which it could flow in case of storm pressure. About half-way across there is a mysterious cavernous opening which seems to descend into the very centre and down to the bottom of the rock. On one occasion 5 000,000 gallons of water were poured into this opening and disappeared. Doubtless the water reached the sea but no one knows how. The extraordinary feature about the rock is that it contains no fossils whatsoever. Though it consists of the Jurassic limestone formation there are no fossils. If any existed they certainly would have been found during the piercing of the tunnel through the centre of the rock. Beside, a great many of the stones extracted were broken up for roads and a reward was offered to the labourers if they could find a fossil. Nor is there anything to indicate the age of the rock. Geologists are at a loss to explain this absence of fossils. Another curious point is that the monkeys who inhabit the higher portions of the rock conceived a strong dislike to the catchment ground; therefore, they occasionally arm themselves with great stones, climb to a vantage ground as high above the place as possible, and, by hurling these stones upon the corrugated iron, have succeeded in making several holes. As the rain-water runs through these holes and is lost in the sand which the iron sheeting is meant to cover, it is necessary constantly to mend these damaged portions of the catchment grounds. Perhaps the monkeys find that they cannot run across the corrugated iron plates as easily as over the sand. Gibraltar has been attacked by

many foes but this is its first experience of a bombardment at the hand of a small but agile force of monkeys.

Though the tunnel is now completed the water difficulty is not yet solved. Enough, and more than enough, water can be obtained, but there is not sufficient storage room for this water. The scheme comprises reservoirs to a capacity of 17,000,000 gallons; then another 30 acres can be added to the catchment grounds and the water difficulty will be at an end for ever. Till this is done the authorities dare not encourage the consumption of their new town supply. The Mediterranean Club, all the soda-water manufactories, the shipping, and the various industries get their water directly from the main supplied by the rain collected on the rock and stored in the great reservoirs. But there is a danger that the 5,000,000 gallons which these reservoirs contain may not suffice during a very dry season. The inhabitants who subscribe are given a water meter and pay for every 100 gallons which they consume. In some 500 houses at Gibraltar the water collected on the roofs is no longer drunk, but some of these inhabitants drink the town supply which they take in jugs from a public fountain. Also it can be taken to their houses and sold to them from a water-cart, or when the house is near enough to a water main their cisterns can be filled by means of a hose. This latter, when practicable, is the easiest and cheapest method. To increase the supply of pure water available pending the construction of further reservoirs the condensers which were used for the Boer prisoners at Bermuda have been purchased and will be put up at Gibraltar. In the meanwhile the sanitary authority has to keep a very keen watch over the roofs and the cisterns of the houses. These must be thoroughly cleaned at least once a year. Then if the water is befouled it only affects one household. The same system, the gathering and storing of rain water from the roof for drinking purposes, prevails largely in Spain but it is not so strictly regulated. Of course this is a soft water, but I could not find that any complaints had been made as to its effects on metallic cooking utensils or on the people who drank it. On the other hand, it is notorious that crews of ships who have to drink condensed sea water soon suffer. In regard to the rock catchment water, it must be noted that before reaching the reservoirs it goes through a rough filter of large stones which retains the larger objects that float down with the water. Then it is more carefully filtered through polarite and also aerated by falling some 40 feet in a thin sheet or spray which forms a sort of cascade. All this must make some alteration in the quality of the water which doubtless takes up a slight quantity of mineral matter, so that it is no longer pure rain water, which, if considered merely as distilled water, might be injurious when drunk in large quantities. Thus, and as matters now stand, there is still a risk that the water-supply may prove insufficient during a very dry season. On the other hand, the water is free from organic contamination and can be drunk with impunity. Dr. W. Turner, surgeon to the colonial hospital and civil prison, informed me that he barely saw more than a dozen cases of typhoid fever in the course of the year, and of these at least half came from ships and were not inhabitants of Gibraltar. What now remains to be done is simply to enlarge the capacity of the reservoirs. Then with the vast catchment grounds on the Catalan Bay side, the tunnel to bring the water collected there over to the Gibraltar side, and reservoirs large enough to keep a sufficient reserve, the great fortress will be safe and able to face every emergency.

THE INSTITUTE FOR TROPICAL HYGIENE IN HAMBURG.

(FROM A CORRESPONDENT.)

HAMBURG, which owes so much to the sea, has done its best for the seaman. Alongside the splendid Seamen's Hospital, and in direct connexion with it, stands the institute for the study of the diseases which are incidental to life at sea and in the tropics, an institute which, although it has been for so few years in existence, has done a great deal to further our knowledge of the many and vast economic problems which, it is now recognised, arise from the heritage of the white man in the tropics. Under the direction of Professor Nocht, with the collaboration of Staff-Surgeon Fülleborn, Dr. Otto, Dr. Viereck, Dr. Mayer, and Mr. Giemsa, there is given a thoroughly solid instruction in the methods to be adopted in elucidating these problems. As Hamburg had honoured itself by honouring Fritz Schaudinn, the great protozoologist whose too early death leaves a gap which it will be hard to fill, so the institute honours itself by giving attention to the many facts of protozoology on which light was shed by the labours of Schaudinn, labours which may be imitated but can hardly be equalled by any of his successors. The importation of babesia parva, the cause of "coast fever," into East Africa may have far-reaching results; the presence of trypanosoma Gambiense is ruining Uganda; and as we have the stegomyia and the other necessary conditions for the life of the parasite of yellow fever already in India the opening of the Panama Canal will probably lead Great Britain to take great interest in the development of that parasite. India has for long been the home of cholera and for some years the home of plague; will she form the home of Yellow Jack? This is a question for those who busy themselves with lowly forms of life to answer. And these lowly forms are of interest other than medical; the history of the development of a trypanosoma throws light on Weismann's once-scoffed-at theory and might well give pause to those who hold that natural needs can be modified by education. Here, too, is a rich field for those who love to twist facts to suit the theory of the equality of the sexes—a field in which the workers are as yet but few.

In the Seamen's Hospital the treatment received has to be paid for—a fact which, unusual as it is in Britain, has caused many a British sailor to be taken away when the captain could not see the immediate need for treatment, as in the early stage of typhoid fever, or knew not whence the money was to be got to pay for the case. Surely here is an opportunity for some philanthropist who has at heart the immense importance of our merchant service to do a good turn to Jack Tar by endowing half a dozen beds in this hospital for British seamen. In the wards may be seen cases of typhoid fever, a disease from which Hamburg would be free, thanks to its excellent water-supply, were it not imported by seamen and others. After careful study of all methods of treatment that by baths and diet has come to be adopted with excellent results. There are cases in the various stages of beri-beri, a disease which, whatever the bacteriologists may say, has more than an accidental connexion with the want of a proper meat diet; cases of helminthiasis, among whom one may see those which present the profound anæmia caused by the bothriocephalus latus, an anæmia which is due certainly to the demands made on the organism of the host and also, it may be, to a profound change in the bone-marrow cells, caused by toxin excreted by the parasite. The cases of dysentery are mostly of the amœboid form and it is found that the mistura simarubæ cum cortice radicis granati, recommended by Gräser, is of great service in these cases. Enemata are also much used and consist of a 1-2 per 1000 solution of tannic acid, of which from half to one litre is given at a time. I was glad to see that much stress is laid on dieting by means of raw meat. For years we have in India adopted this means of nourishing the patient whenever no religious prejudices stood in the way and have found that it is much less irritating to the bowel than milk, which is mostly excreted as firm curd.

Of malaria the cases are many. In one case all three forms of the parasite—quartan, tertian, and tropical—have been observed, a fact which may interest those who hold with Laveran that all are but modifications due to external influences. The treatment is briefly one gramme of quinine hydrochlorate, divided into five doses, in the 24 hours; it has been found that larger doses at a time are liable to cause symptoms of blackwater fever in the African cases. For these when they can take only a small dose a system of dosage is pursued by which the organism becomes habituated to the drug and finally is able to absorb with benefit quantities which at first would have caused very untoward results. With true German thoroughness all sides of the question have been studied and the use of sugar-coated tablets is condemned, as the coating becomes very hard in a short time. Capsules, easy of dissolution in water and accurate in dosage, such as those prepared in Frankfort, may be recommended. Those who have seen the "quinine pills," as hard as B B shot, which used to be the stock in Indian dispensaries, will appreciate the importance of this small matter.

For subcutaneous injections amber-glass ampullæ of quinine lactate in isotonic solution are recommended as being those which give the best results with the least discomfort. Incidentally it may be remarked that the diaphoretic action of whisky is insisted upon here, as compared with the action of cognac. British physiological chemists might well try to solve this problem. It may well be that the enormous quantities of whisky which are exported to our possessions beyond seas may be found to be, good and bad alike, more deleterious than even the teetotalers imagine.

The excellent collection of specimens, macro- and microscopic, is yearly being added to and as much as possible is done in the way of instruction by means of the epidiascope. The teachers could not be more painstaking with the students, each taking a pride in making the sometimes very abstruse problems clear to all and grudging no pains and time to do this. To German thoroughness cosmopolitan *savoir faire* is added—the result being all that can be desired from the student's point of view. The extraordinarily small fee—£5—charged for the instruction afforded, with all equipment for practical work, deserves imitation in more ambitious centres.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Care of Lunatics.

IN these days of high rates and constantly increasing expenditure it is an encouragement to hard-pressed ratepayers to discover any indication, if only from its novelty, of a wish on the part of a public body to use care and discrimination in the spending of public money. Whether lunacy is increasing or not, there is no question of the heavy burden which the care and maintenance of pauper lunatics place on the ratepayers of Lancashire. At a meeting of the Prestwich (North Manchester) guardians on Sept. 20th a letter was read from the clerk of the Lancashire asylums board inviting the chairman, the chairman of the workhouse committee, and the clerk of the Prestwich guardians, to a conference with a special committee of the Lancashire asylums board to be held at Preston on Sept. 27th. The subject to be discussed is whether it may be possible "by a closer coöperation between the asylums board and the boards of guardians in the county to reduce the cost of the maintenance of pauper lunatics to the ratepayers." It is said that about three-fourths of the certified lunatics are kept in the asylums, and one-fourth in the workhouses. It is possible that with more careful classification this proportion might be altered without disadvantage to the inmates of either and to the relief of the congested asylums. Some of those in the workhouses ought to be in the asylums if only there were room for them, while many chronic and harmless inmates of the asylums might be quite well cared for in the workhouses. One of the matters to be considered is whether in order to accommodate the harmless class of lunatics "an extension of the workhouse accommodation should be made or some separate accommodation for them provided in close connexion with the asylums." The asylums board does not suggest, nor it is said does it intend to suggest, "that the financial responsibility with regard to lunatics properly falling upon them and upon the county generally should be transferred to the boards of guardians and to the individual unions." However this may be arranged, the chief interest to the ratepayers is that the great weight of the maintenance of paupers—sane and insane, able-bodied or ailing—is beginning to be perceived by those who control expenditure and there is a prospect of an effort, without harshness or injustice, to be careful and not lavish. The Prestwich board decided to accept the invitation.

School Children's Sight.

Dr. A. Brown Ritchie, medical officer to the Manchester education committee, states in a report on defective eyesight in city school children that there are 85 children in the municipal schools with defective vision "of such a degree as to warrant special educational treatment which could not be given in the ordinary classes of a public elementary school." He will not have the figures from the non-provided schools till the end of the year. There are a considerable number of children with grave defects of eyesight not provided with glasses. This is very much the fault of the parents who in many cases are too indifferent to the welfare of their children or too ignorant to trouble themselves much about it. There is a subscription fund from which the children of very poor persons can be fitted with spectacles, if the parents will take a little necessary preliminary trouble "but, unhappily, they will not always exert themselves to this extent to preserve their children's eyesight." It is to be feared that this statement is applicable to others than the "submerged" of the labouring classes.

Rochdale Infirmary Memorial.

The Rochdale people are evidently in earnest as to their decision to extend the infirmary as a memorial of the jubilee. Several of the cotton-spinning companies are contributing to the fund required. The Rochdale Provident Cröperative Society is giving £1000 to commemorate the jubilee. The sum of £500 is to be given to the infirmary, a drinking fountain is to be placed in Broadfield Park, and the balance is to go to the Nurses' Home.

Vaccination Exemptions.

The Heywood magistrates continue to have a busy time in giving certificates of exemption to antivaccinationists. On one day about a week ago 19 were issued. Only five of the applicants were from Heywood itself, the remainder being from a wide area of Lancashire and Cheshire, Manchester itself sharing in this scheme for insuring the spread of small-pox. The ignorance, and in many cases the sheer and absolute fanaticism, displayed are somewhat depressing and seem to show that mental decadence is accompanying the physical deterioration unquestionably affecting some sections of the population. It is cheering, therefore, to find that at Bury, not very far from Heywood, the magistrates have refused to reduce the price of exemption certificates from 2*s.* to 1*s.* as they were requested to do by a local anti-compulsory-vaccination society. The scale of fees is approved by the Bury town council and sanctioned by the Home Secretary.

Sanitary Inspectors' Conference.

The Conference of the Sanitary Inspectors' Association, presided over by Sir J. Crichton-Browne with his usual ability, has been marked by very useful papers and discussions on sanitary matters. Mr. West, chairman of the executive council, drew attention to a principle not always kept in mind which is equivalent to the old axiom that prevention is better than cure. He thought that there was a tendency to give too much consideration to the "contagious particle," the seed, or germ, and too little to the soil in which it had to develop its brood. It seemed to be considered necessary to find "disease-producing organisms" in cockles and oysters before insisting that the water where they lived should be free from filth and, as at Lincoln, to prove the existence of typhoid germs in a water-supply "by means of the ravages of an epidemic before the central authority in the land found it necessary to insist on the provision of a pure water-supply." Though desirable and always to be aimed at, the discovery and elimination of typhoid germs from a water-supply into which they have entered by some unobserved leakage before an epidemic threatens are by no means easy, the epidemic itself being in many cases the first thing that casts suspicion as to the water being its cause. But apart from the loss of life and the misery and distress wrought by such an illness as typhoid fever it would be worth while on the lower ground of economy to keep up a constant watch and the necessary examinations, for the cost would certainly be less than was that of an occasional outbreak of disease.

Sept. 25th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Glamorgan Water supply.

THE Glamorgan county council obtained in the present session of Parliament an Act enabling surveys to be made to ascertain the amount of water available for the supply of the inhabitants of the county. A further step was taken at the last meeting of the council when a solicitor was appointed to make a summary of the powers and obligations of the several Water Acts of boroughs, district councils, and water companies authorised to supply any part of the county. At the

same time the county medical officer of health was instructed to obtain statistics of the quantity and quality of the existing supplies and of the probable deficiencies of such sources for the growing population. The reports of these officials will be laid before a conference which is to be held at Neath on Oct. 8th, when representatives from the corporations of Cardiff, Swansea, and Merthyr and from the district councils in the county will consider the best means of utilising the existing sources of water-supply and of obtaining others.

A Pauper Register.

A communication has been sent from the Local Government Board to boards of guardians in England and Wales requesting that a register may be kept by the clerks to the guardians of every person relieved during next year whether in the workhouse or as an outdoor pauper. The form of register suggested by the Board includes, in addition to the names, age, and occupation of the person relieved, a record of the dates between which he has been receiving relief, the form of relief, and the reason for its discontinuance. A yearly summary will give the total length of time during which the person has been chargeable and the number of times he has been relieved during the year. The information to be obtained from these records ought to be extremely valuable but if it is to be trustworthy it is necessary that strict accuracy should be insured. The clerk to the Cardiff board of guardians has stated that it will be impossible to keep the register without extra clerical assistance and the guardians have asked the Local Government Board whether the expense involved will be borne by the Imperial funds. There are about 6000 paupers in Cardiff and it is thought that the work of keeping the register would employ nearly the whole of the time of one clerk.

Bristol Municipal Lodging House.

Some of the members of the health committee of the Bristol corporation are concerned that the newly established municipal lodging house is not already paying its way. There is accommodation for 120 men and the general arrangement and administration are on the lines of similar undertakings at Croydon, Southampton, Salford, and elsewhere. The cost of the Bristol house was just over £10,000, of which sum £1600 were for land and £1000 for furnishing. The accounts for the year ending March 25th, 1906, show a total loss of £846, or if the repayment of loans and interest is excluded of £260. The charge made to each lodger is 6*d*. per night. To those who are familiar with the conditions of many common lodging houses in our large towns a mere money loss upon the maintenance of a cleanly, well-ventilated, and properly conducted municipal lodging house will not be regarded as a real loss. There must be some gain to the community in the increased self-respect of the lodgers, even if we leave out of consideration the physical gain which must accrue to them through their more satisfactory surroundings. It is to be hoped, therefore, that the city council will not be disheartened with the result of the first year's working of its lodging-house and will not accept the suggestion of some members to sell or to let the buildings.

The Dolgelly Urban Council and Isolation.

At a meeting of the Dolgelly urban council, North Wales, on Sept. 21st the medical officer, Dr. Hugh Jones, reported that the scarlet fever epidemic had apparently come to an end and the general health of the district was most satisfactory. Mrs. Vaughan, who made an offer some months ago of a free gift of land for the erection of an isolation hospital, wrote to him that the council must come to a decision before Sept. 29th. She felt that the council had had ample time to consider the matter. She made the further condition to her offer that a reasonable scale of charges should be drawn out for the reception of patients from a few neighbouring parishes. The medical officer said that the offer could not fail to be an inestimable boon to the town and district for many generations. The rural district council, which had agreed to contribute one-third of the cost, wrote that it had rescinded that resolution. Objection was taken by the urban council to the compulsory condition imposed by Mrs. Vaughan and some members regarded the site as unsuitable and inconvenient. Dr. John Jones strongly urged his fellow councillors to accept the offer; if not they undertook a great responsibility and made a retrograde step. The hospital would be entirely under the council's control and the new condition would be an advantage. On a vote a motion was carried, inasmuch as the rural district council declined to coöperate and as there was no power to spend money outside the district, not to take any further action. Four members only voted for an amendment to accept Mrs. Vaughan's offer with the new condition. Another amendment that it was essential to erect the hospital without any restrictions was not accepted and there the matter was left.

Enteric Fever at Basingstoke.

As the result of the recent epidemic of enteric fever at Basingstoke, the cause of which was traced to the town water-supply, the borough council had 50 actions for damages entered against it in the High Court, the damages claimed aggregating nearly £4000. By arrangement a committee of the claimants met a committee of the Ratepayers' Association, with the result that the council has agreed to pay £1671 in settlement of the actions without prejudice and with denial of liability.

Sept. 24th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Post-Graduate Course.

THIS course was opened on Sept. 17th by a meeting in the anatomical theatre of the University, presided over by Principal Sir William Turner. The chairman welcomed those who had come to avail themselves of post-graduate instruction and expressed his confidence that all those who had undertaken the giving of instruction would do so most conscientiously. Dr. Byrom Bramwell then addressed the meeting, dwelling upon the need there was for such a course in Edinburgh to enable graduates to brush themselves up and to acquaint themselves with the newer methods of clinical investigation. Clinical investigation had become much more elaborate than it used to be and in the Edinburgh school where much attention was given to teaching all these methods were in use. Immediately after this introductory meeting the work of the programme was entered upon. There has been an unexpectedly large number of graduates come forward for this course, but so far as can be gathered they are much pleased at the provision which has been made for them. Some of the more technical classes have been a little hampered by the numbers entering for them, but this has been arranged as well as possible and in future years provision can be made for larger numbers. Amongst the entertainments provided are a reception given by the Royal College of Physicians of Edinburgh and an at-home by the President of the Obstetrical Society. The course lasts for three weeks and the days are filled from 9 A.M. to 4 or 5 P.M.

Eyesight of Glasgow Children.

A report on the eyesight of the children attending the Glasgow schools has just been handed in by Dr. H. Wright Thomson to the school board of Glasgow. There is nothing particularly new in the report, but it should be useful in calling attention afresh to the undoubted evils which handicap our educational system and to some of the obvious remedies. The teachers tested the visual acuteness of 52,493 children and found 18,565, or 35 per cent., to be below what is regarded as the normal standard. Dr. Thomson examined the 18,565 defectives by retinoscopy and found that 11,209, or 21 per cent. of the whole, had ocular defects. The percentage with ocular defects was fairly constant in all the schools, but the percentage with defective vision was very variable—i.e., many children with normal eyes were found to see badly. The proportion of these cases was highest in the poor and closely built districts and in old schools, and was lowest in the better class schools and in those near the outskirts of the city. The proportion of such cases in the country schools of Chryston and Cumbernauld was much lower than in any of the city schools; and in industrial schools, where the children are fed at school, the proportion was lower than among board school children of a corresponding social class. Defective vision, apart from ocular defect, seems to be due partly to want of training of the eyes for distant objects and partly to exhaustion of the eyes, which is easily induced when work is carried on in bad light or the nutrition of the children is defective from bad feeding and unhealthy surroundings. Regarding training of the eyes for distant objects, Dr. Thomson thinks that much might be done in the infant department by the total abolition of sewing, which is definitely hurtful to such young eyes, and

the substitution of competitive games involving the recognition of small objects at a distance of 20 feet or more. He also suggests that an annual testing by the teachers, followed by medical inspection of the children found defective, would soon cause all existing defects to be corrected and would lead to the detection of those which develop during school life.

Aberdeen Eye Institution.

At the annual meeting of the supporters of this institution on Sept. 13th the report of the directors showed that the expenditure was £277 14*s.* 7½*d.*, while the income was only £173 14*s.* 4½*d.*, leaving a deficit for the year of £104 0*s.* 3*d.* Owing to this serious deficit the directors make a special appeal to the public for increased and more general support. During the year Miss Carr, who had been matron of the institution since 1895, resigned on account of her approaching marriage, and the directors were fortunate in securing the services of Miss Boyd, matron of the Bath Eye Infirmary, who took up her duties in December last. Dr. A. R Galloway, the honorary surgeon, reported that the work had proceeded satisfactorily, as shown by the following figures: total attendances, 10,916; new cases for the year, 3621; steel, stone, and other injuries, 1386; and refractions, 736. There was an increasing number of injuries from granite and engineering yards, the average being about five cases daily. A considerable proportion of these were serious, involving the loss of the eye injured. In spite of all remonstrance, however, workmen as a rule refused to wear any form of protector and elected to run the risk of a total loss of eyesight. Another frequent complaint was septic ulcer of the cornea, which usually followed an injury from a dirty particle or an injury injudiciously treated by a fellow workman with bent pins and other more or less septic instruments. Fortunately, in the electric cautery, which had been in frequent use, there was a most trustworthy method of dealing with these cases, some of which if left untreated for 24 hours would have resulted in total loss of sight in the eye affected. The in-patients, mainly cataract extractions, iridectomies, and enucleations—i.e., the more important operations only—numbered usually about 50 and these were kept as in-patients for only short periods, the average stay for a cataract being rather under one week. The annual income of only £150 was totally inadequate to carry on the treatment of almost 11,000 cases, which gave an average of 35 daily. During the past summer session over 40 students attended the course of instruction in ophthalmology for purposes of graduation in medicine. The large amount of clinical material afforded by the out patient department, equalling in this respect the clinique of any one surgeon in the kingdom, was of exceptional value in the training of University students. Miss Boyd had fulfilled every expectation in her excellent management of the institution.

Sept. 25th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Main Drainage of Dublin.

THE Dublin main-drainage works, which have occupied over ten years in their construction at a cost of over £500 000, were formally opened on Sept. 24th by Alderman Cotton, chairman of the improvement committee. A number of guests, who included the Earl of Meath, the Attorney-General and the Solicitor-General, with many others, were entertained at luncheon at the Pigeon House. The toast of "The King" was enthusiastically honoured, although some few eccentric councillors left the marquee while it was being drunk. Their company, however, was not apparently much missed, for the proceedings went on most satisfactorily with interesting speeches from the Earl of Meath, the Attorney-General, the Lord Mayor, and others. Whether the great undertaking which has just been completed will substantially improve the health of Dublin seems unhappily doubtful. That there is urgent need for such an improvement is obvious from the recent report in THE LANCET of the health of the city, which stated that for the week ending Sept. 15th the death-rate averaged 29·4 per 1000. Sir Charles A. Cameron, the superintendent medical officer of health, was reported in a public journal of August 25th to have stated that he did not think the main drainage of the Liffey area would lower the mortality in Dublin for the simple reason that the people living alongside it are not so overcrowded in proportion to the air space around them. The Sanitary Commissioner of THE LANCET who visited Dublin some years ago seemed to hold the same opinion.

The late Henry Tweedy, M.D. Glasg., M.R.C.S. Eng., L.R.C.P. Irel.

Dr. Henry Tweedy died at his residence, 16, Rutland-square East, Dublin, on Sept. 21st, at the venerable age of 96 years. He was well known and highly esteemed in Dublin where he formerly held several public appointments and enjoyed a considerable practice. He was the author of "Practical Observations on Scarlatina," "Observations on Paralysis," &c. Two of his sons hold high positions in the medical profession—namely, Dr. H. C. Tweedy is physician to Dr. Steevens' Hospital and Mr. Ernest H. Tweedy is the present master of the Rotunda Lying-in Hospital.

The Public Health Appointment in Belfast.

At a meeting of the public health committee of the city of Belfast, held on Sept. 21st—

The Chief Clerk reported that, as directed at last meeting, he had published the advertisement inviting applications for appointment to the office of medical superintendent officer of health. He had posted the advertisement immediately after the meeting to THE LANCET and the *British Medical Journal*, but, as those papers are published on Thursday, though dated Saturday, the orders were returned to him on Saturday morning, when he immediately had the advertisement printed on slips, one of which he posted that day direct under cover addressed to the medical officer of each of the following towns: Glasgow, Edinburgh, Aberdeen Dundee, Newcastle-on-Tyne, Leeds, Manchester, Liverpool, Nottingham, Hull, Bradford, Bristol, Sheffield, Bath, Portsmouth, Plymouth, Southampton, Birmingham, Blackpool, Leicester, Salford, Wolverhampton, Worcester, Bootle, Brighton, Dublin, Paisley, Birkenhead, Huddersfield, Northampton, Lancaster, York, and Preston; and on Monday morning he had similarly sent a copy of the advertisement to the medical officers of health of Bedford, Blackburn, Bolton, Cardiff, Carlisle, Croydon, Eastbourne, Derby, Exeter, Gateshead, Gloucester, Oxford, Reading, Rochester, Rochdale, St. Helens, Swansea, Warrington, and West Ham; and later copies had been sent to the registrars of Owens College, Manchester, Liverpool University, Edinburgh University, Glasgow University, London University, and King's College, London. He wished it to be understood that he had received no instruction from the committee as to the papers in which the advertisement was to be published, but, being aware that the committee were desirous that the fact that the appointment was about to be made should be known by the principal medical officers of health in the country, he had adopted the method described, which was in his opinion a much surer way of bringing the matter under their notice than by means of an advertisement in a journal that might or might not be seen, whereas the communication sent under cover direct to the gentleman for whom it was intended could not escape notice. As an example of the efficacy of the method he reported that applications had already been received from gentlemen in Glasgow, Paisley, and West Hartlepool, and the medical officer of health of Huddersfield had called upon him on Wednesday and presented the slip of the printed advertisement which he had received spending some time making inquiries, and he was also a candidate for the vacancy.

This ingenious excuse on the part of the chief clerk is amusing. 1. He thinks the plan he adopted a surer method of reaching applicants than in having an advertisement inserted in the medical papers. How was it he only discovered this "surer method" after he had sent the announcement to these medical papers and found what any man the least acquainted with newspapers could have told him, that in a weekly paper a notice so late as Thursday cannot be inserted? 2. How could such a "surer method" reach a possible candidate abroad on his holidays? 3. What sort of a public health committee is the one in Belfast of which the chief clerk says "he wished it to be understood that he had received no instructions from the committee as to the papers in which the advertisement was to be published"? The chief clerk, an extremely obliging and popular man, is sacrificed in the interest of a public health committee which gave no instructions as to the papers in which an advertisement for candidates for an office which only medical men can hold is to be inserted. One thing this committee was careful about and that was to rush the election, which it took great care to do, by fixing it for Oct. 1st.

Sept. 25th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Medical Establishment of the French Colonial Troops.

AN Order has just been issued determining the constitution of the medical department of the French colonial troops, leaving out the Inspector-Generals and the Inspectors whose

constitution will be framed by a special edict. According to the Order in question the numbers of the officers will be as follows for each grade respectively: *Médecins principaux* of the first class, 12; *médecins principaux* of the second class, 18; *médecins-majors* of the first class, 88; *médecins-majors* of the second class, 175; *médecins aide majors* of the first and second classes, 141; *pharmaciens principaux* of the first class, 1; *pharmaciens principaux* of the second class, 2; *pharmaciens-majors* of the first class, 5; *pharmaciens-majors* of the second class, 19; and *aide-majors* of the first and second classes, 19.

Bani Sickness.

At a meeting of the Academy of Sciences held on Sept 17th M. Laveran communicated a note from M. Cazalbou, military veterinary surgeon, upon the diffusion of a trypanosomiasis brought about by a fly other than the glossina. This fly is closely related to the tsetse. M. Cazalbou having discovered that a focus of trypanosomiasis existed in the Bani district, the Bani being an affluent of the Niger, captured some of the flies in question and brought them down to Segou where some dogs which had been proved to be free from trypanosomiasis were bitten by them. Two out of seven dogs were infected.

The Association for the Repression of the White Slave Traffic.

The Third International Congress for the Repression of the White Slave Traffic will be held in Paris from Oct. 22nd to 25th. The following can take part in the Congress: (1) Official delegates of Governments and public bodies; (2) delegates from associations and committees organised in the respective countries for the repression of the traffic; and (3) representatives of philanthropic associations and various persons interested in the study of social questions. Every national committee can send ten delegates. Every member of the Congress without exception must contribute a subscription of 20 francs and in return for this will have a right to to all publications, papers, and transactions of the sittings of the Congress. All papers to be read before the Congress should be edited and translated into French at the expense of the national committees. The deliberations of the Congress will be held in the French language. Foreign members, however, can speak in their own language if they like but a *résumé* of their subjects must be communicated in French to the Congress. No speech or paper is to exceed 15 minutes in delivery. The transactions of the meetings will be eventually issued and sent to every member of the Congress. Subscriptions should be sent to M. Loys Bruevere, treasurer of the French Association, 10, Rue Pasquier, Paris.

Sept. 25th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The Fourth Congress of the National Association of Medici Condotti at Milan.

A CONGRESS of 6000 members! This was the muster of *medici condotti* at Milan on August 30th and succeeding two days, assembled to discuss and to protest against the grievances of their long-suffering and much neglected class. The first congress of the association, also held at Milan, numbered barely 300 members. This rapid and enormous growth speaks eloquently of the urgent need there is for reforms and of the determination of the whole service to obtain them. But, as the retiring president, Dr. Villa, remarked, the task is no easy one owing to the inertia of the governing powers and the frequent changes of ministry, by reason of which constantly renewed efforts on the part of the service are rendered necessary in order to accomplish anything. In proof of this ineptitude of the Government he pointed to the unwarrantable delay in the publication of the regulations affecting the sanitary law of February, 1904, and to their failure to grant study leave and to provide gratuitous courses at the universities whereby the *medico condotto*, whose lot was so often cast in remote isolated country districts, might at intervals be enabled to refresh his knowledge and thus be the better prepared to wrestle with the socio-sanitary problems which so profoundly affect the welfare of the poorer classes—such, for instance, as the propagation of syphilis, the excessive infant mortality, the ravages of tuberculosis and alcoholism, and the havoc wrought by malaria. These remarks of Dr. Villa had their sequel in a telegram from the Minister of the Interior which was read at the following sitting assuring the congress of the immediate publication of the regulations and, indeed, before the conclusion of the congress this publication actually took place. But in announcing the fact the President, Dr. Brunelli, commented adversely on their unsatisfactory nature and after registering a formal protest the congress resolved that at the approaching dissolution of the present Parliament an electoral committee should be formed to secure the election of deputies to the new Parliament favourable to the desired reforms and pledged to vote for them. Amongst other business transacted was the passing of resolutions recommending the popularising of sanitary knowledge by means of conferences to be held by the *medici condotti;* the formation of a committee to study various socio-sanitary problems by means of a series of questions addressed to members; and the giving of a preference to the *medici condotti* in the vicinity, when, under the new *régime* of State control of railways, medical officers should come to be appointed to the different sections along the various lines. A motion was proposed urging the assumption by the State itself of the organisation of the public health service by which means the dependence of the *medici condotti* upon various local bodies subject to pernicious influences might be avoided and their position and freedom of action thus become more assured. This proposition was referred for discussion to the sections and will be brought up again at the next congress. In the form of an order of the day a remonstrance was addressed to the Government for not carrying out more strictly the provisions of the law regulating the practice of medicine and surgery by foreign medical men and of dentistry by dentists not holding a diploma in medicine and surgery. As a mark of their appreciation of Dr. Villa's services as president the members of the congress before separating subscribed a considerable sum to be devoted, under the name of the "Enrico Villa Foundation," to the support of one child at the Perugia College for the orphans of *medici condotti*. Venice was chosen as the seat of the next (the fifth) congress of the association.

Trachoma and Italian Emigrants.

It is a fact, only too well known to the shipping companies engaged in the transport of emigrants from Italy to America, that trachoma is extremely prevalent in this country, so much so that one of the most important qualifications required by a surgeon of an emigrant vessel so engaged is ability in "spotting" this disease. It is not unusual for the ship surgeon who has a little time at his disposal at one of the Italian ports such as Genoa or Naples to employ it in gaining experience at one of the local eye clinics in the diagnosis of trachoma which in its slighter degrees may easily be overlooked by an unwary or unpractised eye, especially when, as is sometimes done "with intent to deceive," the reddened conjunctiva has been temporarily blanched by the application of a solution of cocaine or adrenalin. The United States authorities in particular are extremely strict in regard to it and rigorously exclude its victims from their shores. Any emigrants, therefore, afflicted with it who escape the vigilance of the ship surgeon on embarkation and are inadvertently allowed to cross the Atlantic are not permitted to land at American ports and have to be brought back to Italy at the steamship companies' expense. Its ravages are greatest in Southern Italy but few parts of the kingdom are exempt from the scourge. At Barletta it has become so prevalent that measures have lately been taken by the prefect and syndic to arrest its spread and special arrangements made for the reception and treatment of the patients at the eye hospital.

Pellagra at Fermo.

The extension of pellagra in the province of Fermo has attained such proportions as to determine the provincial council for pellagra to offer prizes for the best method of combating it successfully. Public money has been voted for holding conferences and printing pamphlets on the cultivation of maize, for exchanging sound for deteriorated grain, for the purchase of portable desiccators, and to provide a bonus for those who substitute other crops for maize, who construct suitable granaries for its storage, or who adopt a rational type of hygienic dwelling for their labourers.

Sept. 16th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Wellcome Research Laboratories.

THE second report of these laboratories, which are attached to the Gordon Memorial College at Khartoum, has now been issued and, thanks to the munificence of Mr. H. S. Wellcome, the report is not only three times the size of the former one but is illustrated by 21 beautiful plates, mostly coloured, and by more than 100 illustrations. The greatest credit is due to the editor and director of the laboratories, Dr. Andrew Balfour, who, less than three years ago, started work at Khartoum with one laboratory boy and two black servants. He is now aided by a chemist, a travelling naturalist, an economic entomologist, and two European assistants. The first photograph shows very strikingly a dust storm sweeping over Khartoum in the month of June and illustrates one of the difficulties encountered in a town where there are no double windows, electric fans, electric light, or dust-proof rooms. There is every indication that much good work will continue to be done in these laboratories, for two Carnegie Research Fellows have been invited to conduct investigations there, the one working on chemical and the other on bacteriological or pathological lines, and a floating laboratory for collecting museum specimens from the various rivers will soon be organised. The anti-mosquito work has been well continued, for although it was originally noted that more than half of the wells and pools were infected, anophelines and malaria are practically banished, the stegomyia is seldom found, the dangerous pyretophorus is kept in abeyance, and the ubiquitous culex has ceased to be a nuisance. It has been found that the amount of oil which must be used per well need never exceed half a pint and that even two ounces have been found to be ample if none of the oil is lost by splashing. Only six men are engaged in this work under an English inspector, so that for less than £100 per annum Khartoum is kept practically free from malaria and from the perpetual torment of mosquitoes. Dr. Balfour states that 16 different genera, comprising some 35 species of culicidæ, have now been found in the Soudan. There is a special article on biting and noxious insects other than mosquitoes, including tsetse fly, the jigger, ticks, and locusts. The glossina morsitans, the carrier of trypanosomiasis in animals, has been found as far north as latitude 12° N., and is very numerous in the Bahr-el-Ghazal province, where it causes great loss amongst mules and donkeys. The glossina palpalis has been discovered north of latitude 5°, close to the Lado Enclave, and stringent orders have been given to prevent any recruiting into the Egyptian army from the natives of Uganda and other districts already invaded by sleeping sickness. Mr. Austen and Mr. Theobald, of the British Museum, have written valuable descriptions, beautifully illustrated, of blood-sucking and other diptera and of mosquitoes from the Soudan. Though sleeping sickness has so far not been encountered within the Soudan, it is to be remembered that Dr. Todd mentions the occurrence of a case at the Lado Enclave, and that Dr. Neave found Leishman-Donovan bodies in the spleen of a boy coming from the Bahr-el-Ghazal. A detailed account is given of inoculation experiments on dogs, monkeys, and mice with the trypanosome of mules. Chrysoidin has been tried on patients suffering from various tropical diseases, including a boy from Uganda, who has trypanosomes in his blood. No definite cure has been obtained but Dr. Balfour reports that this dye seems to cause a disappearance of the trypanosomes from the peripheral blood and from the gland juice; the only disadvantage of the treatment is that the drug is distinctly irritating to the kidneys, causing copious albuminuria, and must therefore be used with caution. Dr. Neave made some experiments to test the therapeutic effect of the blood serum of wild animals (water buck) from trypanosome-infected districts on animals inoculated with trypanosomiasis. Rabies has occurred in Khartoum and there has been one case of hydrophobia; several fatal cases of diphtheria took place during the year among native babies; enteric fever is still rare; bacillary dysentery is not uncommon amongst the Egyptian soldiery; and one rare case of hydatid of the femur causing extensive erosion of the bone was sent by Captain S. L. Cummins, R.A.M.C. Dr. Neave gives an excellent account of the various parasites which he met with in the southern part of the Soudan and Dr. Bean furnishes a report of the chemical section of the laboratories. He examined 42 samples of river water and 15 of well waters, besides making 150 other analyses. He finds that the White Nile is never free from an appreciable amount of suspended matter, while the Blue Nile, on the contrary, although carrying in flood an enormous amount of mud, becomes almost clear from January till June. The highest proportion found was on August 12th, 1166 parts per 1,000,000, and the lowest on Jan. 12th, only 4 parts per 1,000,000. A dairy, under Government management, exists in Khartoum, but it is only open during the five cool months; for the rest of the year no butter is to be had and the only milk available is that supplied by natives from goats and cows. The Europeans are therefore driven to use milk powders, which are prepared by evaporating milk to dryness on a revolving cylinder, and by heating to 230° F. Dr. Bean praises this milk for those travelling in the interior. It is bacteriologically sterile and the powder, if made into a preliminary paste, can be mixed with hot water and the reconstituted milk proves to be of very agreeable taste. He even suggests that milk powder would be extremely useful for those unable to digest ordinary milk. It appears that the chief gum-producing countries are the Anglo-Egyptian Soudan and the French colony of Senegal, and that the production of gum, as shown by Greig Smith, is due to a specific microbe, named bacterium acaciæ, the gum being formed from the wandering sugars, levulose and maltose, in the sap. A native remedy for syphilis in the Soudan is an earth dissolved in water, and called tureba; Dr. Bean finds it contains no mercury, as reputed, but that it is merely a saline purgative. Enough has been said to show that this report is well worth reading.

Sept. 18th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Bubonic Plague.

A WHARF labourer suffering from plague was removed to the Coast Hospital, Sydney, on July 23rd. A previous fatal case was supposed to have been contracted at the wharves, the patient having been a shipping clerk. A plague-infected area has, however, been discovered at Exmore in the vicinity of the house in which he had lived. No further cases of plague have developed among the passengers of the Peninsular and Oriental steamer *Britannia* which was quarantined at Adelaide.

Scarlet Fever.

An epidemic of scarlet fever has broken out at Sydney and its suburbs. The number of cases notified for the fortnight ending August 11th was 223. The mortality is about from 1 to 1½ per cent. Inquiries made by the health department showed that the spread of the disease was due solely to infection in the ordinary way and that the milk-supply had nothing to do with it.

Hospital Affairs.

This is the time of year when nearly all the hospitals and charitable institutions hold their annual meetings and elect their governing bodies.—The meeting of the supporters of the Melbourne Hospital was held on July 25th. The report stated that the income of the institution has, for the second year in succession, been sufficient to meet the expenditure without recourse to extraordinary appeals. The ordinary income for last year was £23,671 which, with extraordinary income amounting to £4827, brought the total income for the year up to £28 498. The total expenditure for last year was £25 224. During the year 23 388 patients were treated at the hospital. Of these 4802 were in-patients, 11,328 were out-patients, and 7258 were casualty cases. With reference to the provision made in Victoria for the treatment of consumptives the committee expressed the view that it is improper that a large number of persons in various parts of the State who contract the disease should, when it had reached a hopeless stage, be sent to a city hospital for treatment. The total provision made for consumption in the State was altogether inadequate. It is estimated that in Victoria 2000 persons die annually from the effects of tuberculosis.—A steady year's work was reported at the annual meeting of contributors to the Queen Victoria Memorial Hospital for Women and Children, Melbourne. Treatment had been given to 289 in-patients and 3609 out-patients. Of the in-patients

253 had been discharged and 27 died. The total expenditure was £1908 and as the actual income was only £1675 a shortage remained of £233 which reduced the credit balance of the institution from £262 to £29.—The annual meeting of the subscribers to the Women's Hospital, Melbourne, was more largely attended than usual owing to a proposal submitted to alter the constitution of the committee. At present it is composed of 15 ladies and six gentlemen, and it was proposed that the 21 members should be elected without distinction as to sex. The reason for the proposed change was that the gentlemen on the committee differed from the ladies about getting competitive designs for new buildings. The ladies want an open competition and the gentlemen consider that the architect who has already done work for the committee should be employed to draw up plans. At the meeting the mover of the proposed alteration found that the feeling of those present was so opposed to him that he withdrew the motion. The annual report stated that the ordinary receipts were £6275, or an increase of £160 over the previous year.

The Medical Practitioners Bill.

The Medical Practitioners Bill has been read a second time in the Legislative Assembly of Victoria. It is practically the same as the Bill submitted last session, providing for a five years' course, giving power to strike names off the Register, and requiring that registration should be given only to graduates of those countries which reciprocated by registering holders of Australian medical degrees. The authorities of the Homœopathic Hospital have taken strong exception to this clause and the five years' course, which would shut out the holders of American degrees, and this is for them a decided grievance, because "America was the only place the hospital could draw on for homœopathic practitioners." A somewhat similar Bill, providing for reciprocity, has been read a first time in the Legislative Assembly of New South Wales.

Obituary.

Dr. Alexander Barber died at Paddington, Sydney, on August 13th, at the age of 54 years. He had practised at Penrith over 12 years ago and was noted for his many acts of charity and the interest he took in the affairs of the district. The attendance at his funeral was the largest seen in the district for many years. He was a Government medical officer and a member of the licensing bench. He suffered from an internal tumour, for which an operation was performed but without affording relief.

August 18th.

Obituary.

DAVID HENRY GOODSALL, F.R.C.S. ENG.,

SENIOR SURGEON TO THE METROPOLITAN HOSPITAL, ETC.

THE sudden death of Mr. D. H. Goodsall has come as a great shock to his many friends. He had recently returned from his holiday, looking better than he had done for some months. On the morning of Sept. 12th he had what, judging from subsequent events, may be called a slight anginal attack. He paid little attention to it and worked in his usual strenuous manner on that day and the next. On Friday, Sept. 14th, while in the City, he had a recurrence of the pain and when he reached home he was pulseless and in great agony. Under treatment the pain ceased and he appeared to be settling down quietly when he had an attack of heart failure and the end came shortly before midnight.

Mr. Goodsall was born on Jan. 4th, 1843, the second of four brothers. His father, who was a student at St. Bartholomew's Hospital, was pricked in the hand while engaged in making a post-mortem examination in the hospital, death being the result. He left a widow and four sons entirely unprovided for.

Mr. D. H. Goodsall was taken early from school and apprenticed to a druggist near Aldgate at about the age of 14 years. From this age he kept himself entirely. He entered St. Bartholomew's Hospital in October, 1865, being excused his fees on account of his father's death. While at the hospital he kept himself by acting as dispenser and assistant to a medical practitioner in Finsbury-square. In 1868 he was admitted a Member of the Royal College of Surgeons of England and a Licentiate of the Royal College of Physicians of London in 1870. After holding the post of midwifery assistant at St. Bartholomew's he was appointed house surgeon at St. Mark's Hospital in 1870. In 1871 he became assistant surgeon to the hospital and about this time he took up his residence in Finsbury-square and assisted the late Mr. Gowlland in his practice. It was doubtless his early connexion with St. Mark's and the opportunity he had of seeing Mr. Gowlland's extensive rectal practice which led Mr. Goodsall to take up the branch of surgery in which he so greatly excelled. In 1872 Mr. Goodsall was admitted a Fellow of the Royal College of Surgeons and in the same year he was appointed surgeon to the Metropolitan Hospital, becoming senior surgeon in 1892, which office he held at the time of his death. At St. Mark's he became surgeon in 1888 and eventually senior surgeon, and owing to age limit, he retired in 1903. He was also surgeon to St. Saviour's Hospital. But the work done by Mr. Goodsall in the out-patient departments and wards of the hospitals with which he was connected was only a part of his labours on behalf of these institutions. The following extract from a letter from the secretary of the Metropolitan Hospital will give some idea of the amount of time which Mr. Goodsall devoted to the hospital: "He was associated with the hospital when it was in Devonshire-square, City, then in the temporary premises in Commercial-street, and was largely instrumental in securing our present site. During the past 18 months he has been endeavouring to get a site for a nurses' home. Though he was the busiest man I think I have ever met he was always a most regular attendant at all meetings of committees and was a member of each of the seven regular committees. With the single exception of the late chairman (Mr. Joseph Fry, who founded the hospital in 1836 and who for 60 years practically obtained all its income) no man has done so much for the hospital as Mr. Goodsall. His death to the 'Metropolitan' is overwhelming."

Mr. Goodsall was a Fellow of the Statistical Society, of the Royal Medical and Chirurgical Society, of the Medical Society of London, and of the Hunterian Society, and a member of the Clinical Society. He was joint author (with Mr. W. E. Miles) of "Diseases of the Anus and Rectum," and he contributed valuable papers on the same subject to St. Bartholomew's Hospital Reports and various periodicals. His writings were like the man—concise and to the point. He was a most careful and painstaking surgeon who left nothing to chance, and if he thought his patient was in imminent danger he would stay up all night and look after him. It is not to be wondered, therefore, that he obtained most excellent results in the special branch of surgery to which he had devoted his energies.

But Mr. Goodsall was something more than a surgeon: he was gifted with great business capacity and found time to be on the directorate of the Odessa Waterworks Company and at the time of his death he was one of the directors of the Western Telegraph Company and managing director of a printing company. Even these multifarious duties did not exhaust his energies, as the work he did for the Medical Society will prove. For 19 years he was chairman of the house and finance committee and honorary treasurer since 1896. In his hands these posts were no sinecures, so that his loss will be severely felt by the Medical Society, especially as in the last 12 months he has been taking the leading part on behalf of the society in the negotiations which have been going on for the union of the London medical societies. Only the most robust health could have stood the strain of such excessive work, and for 50 years Mr. Goodsall had not spent a day in bed for illness. He had little time for the ordinary social enjoyments but he dearly loved a game at chess or watching a good contest.

No one will be more missed by his friends, as he was ever ready to give his advice and assistance and always seemed to find time to help his friends out of their difficulties. He leaves a widow and one son. In accordance with his wish his body was cremated at the Golder's Green Crematorium on Sept. 18th.

GIFT TO KILMARNOCK NURSING ASSOCIATION.—The Kilmarnock Nursing Association has received from the estate of the late Mrs. Hannah Finnie, of the Abbey, Malvern Wells, the sum of £1000, which has been allocated to the institution by the trustees of the deceased. Recently a gift of £2000 came to the local infirmary from the same source.

Medical News.

UNIVERSITY OF DURHAM.—At examinations for the degree of Bachelor in Medicine held in September the following candidates satisfied the examiners:—

FIRST EXAMINATION.

Elementary Anatomy and Biology, Chemistry and Physics.—Eva Lumb, College of Medicine, Newcastle-upon-Tyne.

Chemistry and Physics.—Isaac Bainbridge, John Akilade Caulcrick, Helen Grace Clark, Robert Vickers Clayton, John Hare, John Parkinson Higham, Howard Tomlin Hunter, George Eric Warner Lacey, Samuel Littlewood, Eric Hemingway Shaw, Stanley Worthington, and James Carruthers Young, College of Medicine, Newcastle upon-Tyne.

Elementary Anatomy and Biology.—Eliot Watson Blake, Guy's Hospital; and Elliot Jessie Ramsbotham, Madeline Rosa Shearburn, and Olivia Nyna Walker, London School of Medicine for Women.

SECOND EXAMINATION.

Anatomy, Physiology, and Materia Medica.—Second class honours: John Pritt Jackson, College of Medicine, Newcastle-upon-Tyne. *Pass list:* Alexander Hay Bower, Leonard Foster Browne, John George Campbell, B.A., Harold Alexander Cooper, Reginald Cyril Herbert Francis, and Patrick Albert Galpin, College of Medicine, Newcastle-upon-Tyne; Raghunath Vithal Khedkar, L.R.C.P. & S., L.F.P.S. Glasg., Grant College, Bombay; Ernest Percy Martin, College of Medicine, Newcastle-upon-Tyne; Theresa de Gournay Miller, London School of Medicine for Women; and Ruth Nicholson, Robert Raffle, Charles Elias Reindorf, Harold Widdrington Sykes, and George Huntly Wood, College of Medicine, Newcastle-upon-Tyne.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berne:* Dr. A. Bürgi has been appointed Extraordinary Professor of Medical Chemistry and Pharmacology, in succession to Dr. Heffter, who goes to Marburg.—*Innsbruck:* Dr. Adolf Posselt has been recognised as *privat-docent* of Internal Medicine.—*Naples:* Dr. Luigi Ferrannini of Palermo has been recognised as *privat docent* of Internal Pathology.—*Padua:* Dr. Giulio Andrea Pari has been recognised as *privat-docent* of Physiology and Dr. Clemente Tonzig as *privat-docent* of Hygiene.—*Pavia:* Dr. Carlo Moreschi has been recognised as *privat-docent* of Internal Pathology and Dr. Mario Vecchi as *privat-docent* of Midwifery and Gynæcology.—*Prague (Bohemian University):* Dr. Anton Heveroch, *privat-docent* of Psychiatry, Dr. Ferdinand Pecirka, *privat-docent* of Dermatology, and Dr. Wenzel Pitha, *privat docent* of Gynæcology, have been granted the title of Extraordinary Professor.—*Prague (German University):* Dr Karl Kriebich of Gratz has been appointed Extraordinary Professor of Dermatology, in succession to Dr. F. J. Pick, who has retired.—*Rome:* Dr. Gherardo Van Rymberk has been recognised as *privat-docent* of Experimental Physiology and Dr. Cesare Rabaioli as *privat docent* of Internal Pathology.—*Strasburg:* It is announced that, although Professor von Recklinghausen has resigned his official position as Director of the Pathological Institute, he will give one course of lectures during the winter session.—*Tübingen:* Dr. Gaupp of Munich has been offered the chair of Mental Diseases in succession to Dr. Wollenberg, who goes to Strasburg.—*Vienna:* Dr. Heinrich Keitler has been recognised as *privat-docent* of Midwifery and Gynæcology and Dr. Hugo Frey as *privat-docent* of Otology.—*Würzburg:* Dr. Gustav Hauser of Erlangen has been offered the chair of Pathological Anatomy, vacated by Dr. G. E. von Rindfleisch, who is retiring. Dr. Reichardt has been recognised as *privat-docent* of Mental Diseases.—*Zürich:* A new professorship of Physical Therapy has been established to which Dr. Ernst Sommer of Winterthur has been appointed.

MALARIA STATIONS IN ITALY.—The Government *Gazette* of Italy, in announcing that the medical staff of the Italian Red Cross Society's stations at "Agro Romano" and "Paludi Pontine" had finished their terms on Sept. 1st and 15th respectively, when they were replaced by others, gives the following particulars. During the first term—i.e., from June 15th to August 31st—the following figures were collected: 1. Agro Romano (seven stations). At these, 11,333 individuals were given quinine. There were 254 cases of malarial fever and 528 cases of various diseases, 23 persons were conveyed to hospitals in Rome by means of the railway, and 40 were removed thence by ambulance or carts. 2. Paludi Pontine (three stations). 3955 individuals were treated with quinine; there were 451 cases of malarial fever and 128 cases of various diseases; nine grave cases were removed thence to hospital. The total of ten Red Cross sanitary stations gave the following figures: number of persons to whom quinine was administered, 15,288; cases of malarial fever, 705; cases of various diseases, 656; patients removed to hospital, 72; and doses given in tablets from June 15th to August 30th, 154 kilogrammes.

PRESENTATION TO A MEDICAL PRACTITIONER.—Mr. Arthur Weir Limont, M.B., C.M. Edin., and Mrs. Limont were presented last week with a Cornish serpentine inkstand and two candlesticks as a mark of respect and esteem on the occasion of their leaving Veryan (Cornwall).

SOUTH DEVON AND EAST CORNWALL HOSPITAL, PLYMOUTH.—As a result of the Hospital Saturday collection, which was held in Plymouth on July 14th, the sum of £512 has been received by the committee of the South Devon and East Cornwall Hospital.

GIFT TO ST. BARTHOLOMEW'S HOSPITAL.—Mrs. Shaw has sent to Lord Ludlow, treasurer of St. Bartholomew's Hospital, in memory of her late husband, Mr. W. T. Shaw, a donation of £1000, of which £500 are to be allocated to the general building fund and £500 to the new nurses' home fund.

CHILDREN SUFFERING FROM OPHTHALMIA, &c.—A circular addressed to the metropolitan guardians has been issued by the Local Government Board stating that the Board's attention has been called to a passage in the report for 1905 of the children's committee of the managers of the Metropolitan Asylum District in which comment is made upon the apparent want of appreciation by many metropolitan boards of guardians of the homes and institutions provided by the managers under the authority of the Board's Order of April 2nd, 1897, for certain special classes of children chargeable to metropolitan unions and parishes. The Order above mentioned, copies of which were forwarded to the guardians on April 5th, 1897, provided that the persons for whose reception and relief the Metropolitan Asylum District was formed should include amongst others (*a*) children suffering from ophthalmia or other contagious disease of the eye; (*b*) children suffering from contagious disease of the skin or scalp; (*c*) children requiring either special treatment during convalescence or the benefit of seaside air; and (*d*) children who by reason of intellect or physical infirmity cannot properly be trained in association with children in ordinary schools. The managers have established institutions for children belonging to these classes and in the interest of such children the Board would urge upon the guardians the importance of their availing themselves of the accommodation and special treatment thus provided. It is suggested in the report of the committee that one reason why boards of guardians do not more fully avail themselves of these institutions is that an impression prevails that the cost of the maintenance of children in them "is paid by each separate board of guardians in accordance with the number of children they respectively have in the institutions." The secretary of the Local Government Board points out, therefore, that although under Section 32 of the Metropolitan Poor Act, 1867, the expense of the maintenance of any child sent by a board of guardians to one of these institutions is separately charged to the Poor-law union from which the child is sent, yet under Section 69 of the Act as amended by Section 1 of the Metropolitan Poor Amendment Act, 1870, the guardians are entitled to be repaid this expense from the Metropolitan Common Poor Fund. In order that children who need treatment in the institutions referred to may be systematically removed to them it is requisite that all children under the care of the guardians should be regularly and frequently inspected by the medical officer, whose duty it should be to report the result to the guardians together with the name of each child coming within any of the four classes above specified whom he may recommend for removal. As regards children in Poor-law schools the Board in its circular letter of Dec. 7th, 1872 pointed out the importance of such an examination and in the Poor-law unions in which the Order of Feb. 10th, 1899, is in force it has been made the duty of the medical officer of every separate Poor-law school, once at least in every calendar month, and as often as may be necessary, to examine each child in the school and to report to the guardians immediately after such periodical examination the case of any child suffering from any contagious affection of the scalp or of the skin or of the eyes, and the Order provides

that such child shall forthwith be separated from the children in health. The Board trusts that the guardians will give the matter their careful consideration and will take such action as is requisite with a view to secure that all children of the classes specified who come under their care may be as promptly as possible removed to such institutions of the managers as are suited to their respective requirements.

THE TORQUAY EDUCATION COMMITTEE AND CHILDREN WITH DEFECTIVE EYESIGHT.—At a meeting of the Torquay education committee held on Sept. 18th, Dr. H. V. Mackenzie was appointed to examine children with defective eyesight at a honorarium of £50 per annum. There was some opposition to the appointment, which will have to be confirmed by the town council, and a letter was read from the Local Government Board stating that, although in any case where there was reasonable suspicion that a child was suffering from an affection of the eyes of a contagious character the local education authority might call in a medical practitioner to examine the child and pay him a reasonable fee for so doing, the authority was not authorised to incur expenditure in the employment of a medical man to examine school children with a view to remedies being prescribed in cases where the eyesight was defective.

THE DELAMERE SANATORIUM.—A scheme has been prepared and is now under the consideration of the Charity Commissioners for the future administration of the Crossley Sanatorium at Delamere and the Manchester Hospital for Consumption and Diseases of the Throat and Chest, consisting of an out-patient department in Manchester and an in-patient hospital at Bowdon. They are to be consolidated and managed as one institution under the title of the Manchester Hospital for Consumption and Diseases of the Throat and Chest. There is to be a body of 16 trustees entitled to hold office for life, in whom all property is to be vested. The institution is to be maintained, extended, and supported by means of bequests, annual subscriptions, or other gifts, the contributions and payments of patients, the income derived from the invested funds, and in case of need the capital may be used under certain conditions. The governors are to have the power of nominating new trustees. The personal estate of the institutions amounts to about £80,000.

BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, 41 and 43, Maddox-street, Bond-street, London, W.

Midwifery for Nurses. By Henry Russell Andrews, M.D., B.S. Lond., M.R.C.P. Lond.; Assistant Obstetric Physician to, and Lecturer to Pupil-midwives at, the London Hospital; Examiner to the Central Midwives Board. Price 4s. 6d. net.

CLAYE, BROWN, AND CLAYE, "Courier" Office, Macclesfield.

Why Vaccinate? By Harold W. Whiston. Second edition. Price 6d. (By post, 7½d. net.)

CONSTABLE, ARCHIBALD, AND CO., LIMITED, London.

Practical Methods of Inorganic Chemistry. By F. Mollwo Perkin, Ph.D., Head of Chemistry Department, Borough Polytechnic Institute, London. Price 2s. 6d. net.

FISCHER, GUSTAV, Jena.

Die heutige Lehre von den pathologisch-anatomischen Grundlagen der Herzschwäche. Kritische Bemerkungen auf Grund eigener Untersuchungen von L. Aschoff, Professor in Marburg i.H., und S. Tawara, Arzt in Japan. Price M.2.

Arbeiten aus dem Königlichen Institut für Experimentelle Therapie zu Frankfurt a.M. Herausgegeben von Geh. Med.-Rat Prof. Dr. P. Ehrlich. Heft II. (Aus der Prüfungstechnischen Abteilung): R. Otto, Die staatliche Prüfung der Heilsera. Price M.3.

Mitteilungen aus der Augenklinik des Carolinischen Medico-Chirurgischen Instituts zu Stockholm. Herausgegeben von Dr. J. Widmark, Professor der Augenheilkunde am Carolinischen Medico-Chirurgischen Institut zu Stockholm. Achtes Heft. Price M.6.

HOEPLI, ULRICO, Milano.

Commentarii di Clinica Medica desunti dalla Morfologia del Corpo Umano. Parte Speciale illustrata da Figure e Tavole. Volume Primo. Prof. Achille de Giovanni, Direttore della Clinica Medica Generale della Regia Università di Padova, Senatore del Regno. Price L.8.

Malattie dell' Orecchio, del Naso e della Gola. (Oto-rino-laringoiatria.) Dott. Tommaso Mancioli, Aiuto-preparatore della R. Clinica Oto-rino-laringoiatria di Roma, Otoiatria delle Ferrovie dello Stato. Price L.5.50.

KIMPTON, HENRY, 13, Furnival-street, Holborn, London, E.C., and 40 and 42, University-avenue, Glasgow.

The Practitioner's Library. The Practice of Pediatrics. In Original Contributions. By American and English Authors. Edited by Walter Lester Carr, A.M., M.D., Consulting Physician to the French Hospital, New York; to the New York Eye and Ear Infirmary; Visiting Physician to the New York City Children's Hospitals and Schools. Price 31s. 6d. net.

Kimpton's Pocket Medical Formulary. By K. Quin Thornton, M.D., Assistant Professor of Materia Medica in the Jefferson Medical College, Philadelphia. New (Seventh) Edition, revised. Price 7s. 6d. net.

LONGMANS, GREEN, AND CO., 39, Paternoster-row, London, E.C.

A History of Chemistry. By F. P. Armitage, M.A., F.C.S.; late Exhibitioner of Magdalen College, Oxford; Assistant Master at St. Paul's School. Price 6s.

MARHOLD, CARL, Halle-a.-S.

Ein Gang durch eine moderne Irrenanstalt. Von Dr. H. Hoppe, Nervenarzt in Königsberg i.Pr. Price M.1.60.

METHUEN AND CO., 36, Essex-street, London, W.C.

A Practical Chemistry Note-Book for Matriculation and Army Candidates. Easy Experiments on the Commoner Substances. By S. E. Brown, M.A. Camb., B.A., B.Sc. Lond., Senior Science Master, Uppingham School. Price 1s. 6d. net.

RICHARDS, E. GRANT, 7, Carlton-street, London, S.W.

The Birds of the British Islands. By Charles Stonham, C.M.G., F.R.C.S., F.Z.S. With Illustrations by L. M. Medland. In twenty parts. Part II. Price 7s. 6d. net, each part.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BURFIELD, J., M.B., B.S. Lond., F.R.C.S., Eng., has been appointed Assistant Medical Officer at the Bolingbroke Hospital, Wandsworth Common, S.W.

CASHMAN, JAMES P., M.B., B.S. R.U.I., has been appointed Resident Medical Superintendent of the Cork District Asylum.

DAWNAY, A. H. PAYAN, M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Ophthalmic Surgeon to the Hounslow Hospital.

DEANE, JOHN EDWARD JAMES, L.K.Q.C.P., L.F.P.S. Glasg., has been appointed Officer of Health for Eaglehawk, Victoria, Australia.

HARRIS, JOHN RICHARDS, M.D. Melb., has been appointed Public Vaccinator for the North-Eastern District, Victoria, Australia.

HILL, ARTHUR MACHEN, M.B. Melb., has been appointed Public Vaccinator for the Midland District, Victoria, Australia.

JEPHCOTT, CHARLES, M.B., B.S. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Chester Union by the Chester Board of Guardians.

MOSSOP, E. E., M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at the Hospital for Sick Children, Great Ormond-street, W.C.

RENDALL, PERCY, M.D., M.R.C.S., has been appointed Divisional Surgeon to the V Division of Metropolitan Police at Epsom.

SWEET, WILLIAM SYDNEY, M.B., B.S. Lond., has been appointed Officer of Health for the West Riding of Maffra, Victoria, Australia.

TIVY, CECIL B. F., M.B., B.Ch. R.U.I., has been appointed House Surgeon to the Cork Eye, Ear, and Throat Hospital.

WADE, H., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Enfield District of the county of Middlesex.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN ROYAL ASYLUM.—Senior Resident Assistant Physician. Salary £200.

BIRMINGHAM ASYLUM, Rubery-hill.—Junior Assistant Medical Officer. Salary £150 per annum, with apartments, board, &c.

BIRMINGHAM, GRAVELLY HILL, ASTON UNION WORKHOUSE AND COTTAGE HOMES.—Resident Assistant Medical Officer. Salary £120 per annum, with apartments, rations, and washing.

BIRMINGHAM, QUEEN'S HOSPITAL.—Pathologist. Honorarium £100 per annum.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—Second House Surgeon, unmarried. Salary £80 per annum, with board, residence, and washing.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Surgeon, unmarried. Salary £90 a year, with board and lodging.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant.

CHORLTON AND MANCHESTER JOINT COLONY FOR EPILEPTICS, Langho, near Blackburn.—Resident Medical Officer. Salary £150 per annum, with board and residence.

EGYPTIAN GOVERNMENT, MINISTRY OF EDUCATION.—Professor of Midwifery and Gynæcology. Salary £400 a year. Also Medical Tutor and Registrar to Kasr-el-Ainy Hospital. Salary £400 a year.

FINSBURY DISPENSARY, Brewer-street, Goswell-road, E.C.—Resident Medical Officer. Salary £140 per annum, with furnished residence, attendance, &c.

HAMMERSMITH INFIRMARY AND WORKHOUSE, Ducane-road, Wormwood Scrubbs, W.—Assistant Infirmary Medical Superintendent and Assistant Medical Officer. Salary of Assistant Infirmary Medical Superintendent £100 per annum, rising to £130 per annum, with board, apartments, washing, and attendance. Salary as Assistant Medical Officer £20 per annum.

HAMPSTEAD GENERAL HOSPITAL.—Resident Medical Officer for six months. Salary £80 per annum, with board and residence.
HULL ROYAL INFIRMARY.—Honorary Physician.
LEWIS PUBLIC DISPENSARY.—Honorary Medical Officer.
LEICESTER INFIRMARY.—Resident Surgical Dresser for six months. Honorarium £10 10s., with board, lodging, and washing.
LIVERPOOL, CITY OF.—Assistant Medical Officer of Health. Salary £250 per annum.
LIVERPOOL INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer, unmarried. Salary £120 per annum, with board, washing, and lodging.
MACCLESFIELD, CHESHIRE COUNTY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £140, rising to £160, with apartments, board, and washing.
MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.
MANCHESTER, CHORLTON UNION WORKHOUSE HOSPITALS, Withington.—Senior and Junior Resident Medical Officers. Salary £100 per annum, with rations, apartments, and attendance.
MANCHESTER ROYAL INFIRMARY AND DISPENSARY.—Honorary Assistant Physician.
METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Surgeon. Also Assistant Surgeon.
PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—House Physician and House Surgeon, for six months. Salary at rate of 50 guineas a year, with board and residence.
PADDINGTON INFIRMARY.—First Assistant to the Medical Superintendent and Assistant Medical Officer, unmarried. Salary £100 per annum, rising to £120, together with board, lodging, and washing. Also Second Assistant to the Medical Superintendent for six months. Honorarium of £36 and board, lodging, and washing.
PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.
ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—House Physician and Casualty House Surgeon for six months. Board, &c., are provided. Also Resident House Physician and Resident House Surgeon. Board, &c., are provided.
SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Clinical Assistants.
ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer, unmarried. Salary at rate of £50 per annum, with board, residence, and laundry.
SEAMEN'S HOSPITAL SOCIETY, Greenwich S.E.—DREADNOUGHT HOSPITAL, Greenwich:—Two House Physicians and Two House Surgeons for six months. Salaries at rate of £50 per annum, with board, residence, and washing. Also Honorary Dental Surgeon. Also Honorary Medical Officer for the Electrical Department. BRANCH HOSPITAL, Royal Albert Dock, E.:—Senior House Surgeon for six months. Salary at rate of £75 per annum and additional £25 per annum for acting as Registrar, &c., with board, residence, and washing. Also House Surgeon for six months. Salary at rate of £50 per annum, with board, residence, and washing. Also Honorary Anæsthetists.
SHEFFIELD, CITY OF.—Visiting Medical Officer for Schools. Salary £400 per annum.
SOUTH LAMBETH, STOCKWELL, AND NORTH BRIXTON DISPENSARY, Wilkinson-street, Albert-square, Clapham-road.—Vacancy in the Medical Staff.
STAFFORDSHIRE COUNTY ASYLUM, Cheddleton, Leek.—Assistant Medical Officer, unmarried. Salary £150, rising to £200, with furnished quarters, board, and washing.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Physician. Salary £100 per annum, with board, lodging, and laundry. Also House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Fulham and Hammersmith, in the county of London.

Births, Marriages, and Deaths.

BIRTHS.

METCALFE.—On Sept. 24th, at 2, St. Leonards, York, the wife of A. W. Metcalfe, M.A., M.D., of a daughter.
NASH.—On Sept. 20th, at Oulton House, Accrington, the wife of Elwin H. T. Nash, M.R.C.S., L.R.C.P., of a son.
NEWTON.—On Sept. 21st, at Brook-hill, Sheffield, the wife of Duncan Gray Newton, F.R.C.S., of a son.
STURROCK.—On Sept. 23rd, at Arima, Broughty Ferry, the wife of J. F. Sturrock, M.B., L.R.C.S. Edin., of a son.
SUTTON.—On Sept. 21st, at Clare House, Sidcup, the wife of C. R. Arnold Sutton, M.A., M.D. Camb., of a son.
WILLIAMSON.—On Sept. 21st, at Trelawney, Springfield-road, Leicester, the wife of Lieutenant-Colonel J. G. Williamson, R.A.M.C. (retired), of a daughter.

MARRIAGE.

BUCKLEY—LANYON.—On Sept. 20th, at St. Peter's, Croydon, James Charles Buckley, M.D., of Nottingham, to Mabel, youngest daughter of the late John Charles Lanyon and of Mrs. Lanyon, of South Croydon.

DEATHS.

BIRT.—On Sept. 19th, at Reading, Thomas Birt, Major, R.A.M.C., aged 44 years.
MACDONALD.—On Sept. 20th, at Carden-place, Aberdeen, James Macdonald, M.D., F.R.C.S. Eng., late H.M.I.S., in his 79th year.
TWEEDY.—On Sept. 21st, at Rutland-square, Dublin, Henry Tweedy, M.D., in his 96th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A DEPARTURE IN AGENCY ROUTINE.

A MEDICAL correspondent who is the licensee of a home for inebriates has forwarded to us some papers which he has received from the Southern Medical and Scholastic Agency, Limited. The secretary of this company informs our correspondent that they "are about to issue and advertise widely a list of those willing to receive resident patients and if you wish an advertisement of your requirements inserted kindly fill in and return the enclosed form." The fee for an advertisement in the forthcoming list is 10*s.* 6*d.* per annum which cannot be called expensive, but in "the enclosed form" we find the following guarantee has to be signed:—

"I herewith enclose the fee agreed (10*s.* 6*d.*) for registration and advertisement referred to and I further undertake to pay to you 5 per cent. upon all fees received from any patient introduced by you during the first six months of their residence at my house."

The departure of the Southern Medical and Scholastic Agency is open to criticism.

THE CONSULTANT AND THE GENERAL PRACTITIONER.

To the Editors of THE LANCET.

SIRS,—I was interested in the letter signed "M.B. Lond." in THE LANCET of Sept. 22nd, p. 841. Personally, I have received the very greatest kindness, courtesy, and help from consultants in every part of England except once, some 20 years since, when a patient, and personal friend, took his daughter, without my knowledge, to a consultant at Liverpool. On his returning home he called to see me at once and told me that the consultant seemed annoyed that there was no letter from me and asked me to write to him; this I did, giving a full account of the family history, which was *not* favourable. The consultant sent the letter direct to my patient; needless to say I lost both friend and patient.

I am, Sirs, yours faithfully,
Millom, Cumberland, Sept. 22nd, 1906. PERCY B. STONEY.

To the Editors of THE LANCET.

SIRS,—I have had some strange experiences with consultants. I have had dealings with one who generally fixes the time so that the medical man in charge only gets the message some time after the hour fixed, the consultant examines the patient alone and tells the patient that he will write to tell his medical man, say what is wrong and what he recommends should be done. I give some facts regarding the last case I saw with this consultant. A club patient suffering from intestinal obstruction was doing well at 7.45 one Friday evening, when I called, and there was no mention of a consultation. At 9.30 the same night a messenger brought word that a consultant would be at the patient's house (a mile away) at 10 P.M. I met him. On Saturday I was asked to meet him again and did so. On calling on Sunday night I was told that the consultant had called to inquire how the patient was (I think he saw the patient) and had offered to meet me again on Monday if I wished it, and I, perhaps foolishly, met him again. On the Tuesday I got a note from the patient's wife telling me that the consultant had taken the case over and I need not call again. The consultant kept that case on for two or three months without a word or note to me.

This case raises other points. The patient was an Oddfellows' secretary and was paying 4*s.* per annum. (*a*) What should the club medical officer charge for the three consultations practically forced upon him at inconvenient times? (*b*) The patient has been ill again and asked him to call. What should he do? I am a lover of peace and wish to do right.

I am, Sirs, yours faithfully,
Sept. 24th. M.B. Edin.

*** (*a*) The club medical officer must be bound by the rules of the society, in whose service he is, as regards the fees for consultations, if such rules exist. If there are no such rules we think he should charge his usual consultation fees. (*b*) He may well refuse to see the patient again but as he describes himself as a lover of peace he may prefer to continue attendance.—ED. L.

ANCIENT OCULISTS.

AN interesting instance of the comradeship of men of science notwithstanding political international rivalries was recently provided by the eulogium passed at the French Academy upon Dr. J. Hirschberg, professor of ophthalmology at the University of Berlin. He, not content with his onerous professorial duties and the calls of a large practice, has devoted many years to the formation of a medical library which in 1901 had become so extensive that the catalogue comprised 431 pages. But he has also been making a complete study of the work of ancient oculists and as a result has published the following works. His first book on the historical branch of the subject appeared in 1890 and was entitled "Egypt: Historical Studies of an Oculist." The second was the publication, in 1899, of the "Oculistica" of Aetius of Amida, which he gives in the original Greek and also in a Latin translation. This was followed in the same year by a "History of the Oculists of Antiquity," which treats of the therapeutics of the

diseased eye among the Egyptians, Hindoos, Greeks, Romans, and Byzantines. In 1902 he published, with the assistance of Herr M. J. Lippert, a most competent Arabic scholar, the Oculistica of Avicenna; more recently a study of all the known works of Arabic oculists; and finally, in 1905, a "History of Arabic Oculist Science." It is to be hoped that now that the committee of the Berlin Corpus of Latin Inscriptions has published the volume containing the oculist seals Dr. Hirschberg will write a medical and pharmaceutical commentary upon these texts, for the comprehension of which his erudition renders him pre-eminently qualified.

DENTISTS' CHARGES TO MEDICAL MEN.

To the Editors of THE LANCET.

SIRS,—May I ask your own and others' opinions anent what follows? I had a set of artificial teeth inserted lately by the son of a brother practitioner, an L.D.S., *only a few years in practice* and am charged therefor £30 sterling. The gold *is said to be* 18·17 carat and the teeth pin set in ebonite. The upper and lower sets weigh altogether (gold, ebonite, and teeth) nearly two and three-quarter ounces avoirdupois (2¾ oz.). Please state if you think the above charge is a fair charge. Also state if you think doctors should expect the services of surgeon-dentists at less than the usual prices charged?

I am, Sirs, yours faithfully,
"MA CONSCIENCE" £30.

*** The opinion sought is a little difficult to give. The fees for artificial dentures differ according to circumstances but we understand that 30 guineas is considered by the best class of practitioners as a good fee. Dental surgeons do not as a rule charge medical practitioners unless the latter desire that a charge should be made and then it is the general practice to charge half the usual fee.—ED. L.

THE ARMY MEDICAL DEPARTMENT OF THE ARGENTINE REPUBLIC.

THE Argentine Republic with a population of 5,190,000 inhabitants maintains a regular army of 1335 officers and 7868 men, but were the reserves to be called out it is said that these numbers would mount up to 8000 and 200,000 respectively. The medical department, which was established by decree in October, 1888, is an autonomous corps under the command of a surgeon-general who has the relative rank of brigadier-general. The number and rank of his subordinate officers are as follows:—Surgeon-colonels, 3; surgeon-lieutenant-colonels, 6; surgeon-majors, 12; surgeon-captains, 12; surgeon-lieutenants, 12; apothecary-major, 1; apothecary-captains, 3; apothecary-lieutenants, 12; apothecary-sub-lieutenants, 18; veterinary-captain, 1; and veterinary-sub-lieutenants, 15. The uniform worn by members of the medical corps resembles that of the infantry of the line, the distinguishing badge being a caduceus encircled by a laurel wreath. Three inconspicuous buttons and button-holes admit of the sleeves being rolled up to the wearer's elbows. In May, 1902, a military medical school was constituted by decree with the object of completing the training of candidates for commissions in the Medical Corps. Students in medicine of two years' standing who have satisfied examiners in zoology, botany, anatomy, and histology are eligible for admission. In the case of postulants who are desirous of serving as apothecaries or veterinary surgeons a single year of preliminary professional study suffices. The school is attached to the military hospital at Buenos Ayres, a very well-appointed establishment with 268 beds. The probationers are subject to military discipline and wear uniform, but although all expenses for food, lodging, clothing, and books are borne by the State a sufficient number of recruits to fill vacancies cannot be obtained. In 1904 there were only 28 medical pupils under instruction, four candidates for the position of apothecary, and eight for that of veterinary surgeon. For the foregoing details we are indebted to an exhaustive article in the *Archives de Médecine et de Pharmacie Militaires* by Surgeon-Major Romary of the French army.

GREEN TEA.

To the Editors of THE LANCET.

SIRS,—Will any of your readers with better opportunities of judging than I have had be kind enough to give their experience of "green" tea as a beverage, saying whether, and, if so, for what reasons, it should be regarded as more or as less wholesome than "black" tea of equally good quality?

I am Sirs, yours faithfully,
Sept. 19th, 1906. G. S. B.

A MOTOR CAR MEDICINE CASE (TABLOID BRAND).

WE have received from Messrs. Burroughs, Wellcome, and Co., of Snow-hill Buildings, Holborn Viaduct, London, E.C., a neat black japanned metal case containing simple remedies and such accessories as will enable first-aid treatment to be administered in the event of certain injuries occurring in a motor-car accident. The case measures 7½ inches by 4¼ inches by 2 inches and is a little over an inch deep. The outfit is thus quite compact and will be useful to the motorist, inasmuch as it will enable him to apply first-aid treatment either in slight or serious cases pending the arrival of the medical man. The contents of the case are varied to meet individual requirements but the stock pattern is fitted out as follows: "Tabloid" pleated dressings comprising one packet of two triangular bandages, one two and a half inches and one one-inch open-wove bandage, one ounce absorbent cotton-wool, and one ounce boric lint. The dressings are compressed and therefore occupy very little space. Then there are one pair of folding scissors, an eye sponge, two camel hair pencils in glass tube, three yards of half-inch plaster in a tin, court plaster, oiled gauze, safety pins and ordinary pins. Also there are bottles of carron oil, sal volatile and castor oil (with brush), and tubes of "borofax" and "protective skin." The drugs include tabloid brand products as follows: quinine bisulphate gr. 2, soda-mint, cascara sagrada gr. 2, phenacetin compound, bismuth salicylate gr. 5, potassium chlorate and borax, and soloid brand products, lead subacetate and boric acid (perfumed for use as a lotion).

ACETONE COLLODION.

Mr. George M. Beringer has recently communicated a paper to the American Pharmaceutical Association (*Chemist and Druggist*, Sept. 22nd, p. 472) on an improved form of collodion, which is prepared by substituting acetone for a mixture of alcohol and ether as a solvent for the pyroxylin. Acetone possesses remarkable solvent properties and is capable of dissolving a wider range of substances than the official mixture of alcohol and ether. Acetone collodion forms an excellent basis for the external application of the aromatic phenols, iodine, iodoform, cantharidin, and many other substances. It contains five grammes of pyroxylin and one gramme of camphor, made up to 100 cubic centimetres with acetone. A blistering collodion is prepared from powdered cantharides 60 grammes, pyroxylin four grammes, camphor one gramme, and sufficient acetone to produce 100 cubic centimetres of product. It exerts a strongly vesicant action. Some of the so-called "liquid court plasters" are simply solutions of pyroxylin in acetone.

A SCISSORS SHIELD FOR CIRCUMCISION.

To the Editors of THE LANCET.

SIRS,—My attention has been called to Mr. Haines Cory's claim to be the originator of the above which he says has been suggested by him in November, 1900, as a "Frænum Scissors for the Tongue." While admitting that there is some resemblance between the two instruments, I maintain there is a very wide difference, my instrument being as unsuitable for cutting the frænum as Mr. Cory's is for circumcision. The chief points between the two are in mine: (1) The groove lies central and tapers to a fine point with the object of fixing the foreskin tightly and preventing slipping; (2) the shield and two blades readily separate for cleansing purposes; and (3) my instrument is stronger and larger. Finally, I have never seen Mr. Cory's frænum scissors until to-day.

I am, Sirs, yours faithfully,
HENRY DUTCH, M.D. Brux., &c.

Berkeley-street, W., Sept. 25th, 1906.

G. R.—We doubt whether there is any one book on the history of medicine which will "meet with the requirements of the London M.D." Possibly information on the point might be obtained through inquiry from the Academic Registrar at the University. Our correspondent will find the following books of use: Dr. John Freind, "A History of Physick from the Time of Galen to the Sixteenth Century." First published in 1750. Dr. E. T. Withington, "Medical History from the Earliest Times," 1894. Dr. Munk's "Roll of the Royal College of Physicians of London" might also be consulted.

X.—A reference to the Medical Directory will show our correspondent that there are British practitioners at work in the Argentine Republic. For information as to formalities to be complied with for leave to practise he is advised to apply to the Consul-General for the Republic in this country, Dr. Sergio García Uriburn, 3, Budge-row, Cannon-street, London, E.C.

Mr. J. Clarke.—Permission to practise in Monaco is granted to foreigners as a favour solely by permission of the Prince of Monaco and application should be made to him through the Consul General for Monaco in London, Mr. Theodore Lumley, 37, Conduit-street, Bond-street, W.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 27th, 1906.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Sept. 21	30·30	N.E.	...	101	65	53	55	57	Overcast
" 22	30·37	E.	...	102	63	53	54	56	Cloudy
" 23	30·43	N.E.	...	99	59	51	54	57	Cloudy
" 24	30·43	N.E.	...	96	61	50	50	53	Overcast
" 25	30·48	E.	...	101	62	49	49	54	Fine
" 26	30·56	N.	...	96	62	48	49	53	Fine
" 27	30·60	N.E.	...	91	61	48	50	53	Foggy

During the week marked copies of the following newspapers have been received: *Chard and Ilminster News, Wigan Observer, Westminster Gazette, Birmingham Daily Post, Daily Telegraph, Hampshire Advertiser, Southampton Echo, Morning Advertiser, Daily News, Edinburgh Evening News, Wolverhampton Midland Express, Newcastle Chronicle, Herts Mercury, Scientific American, Glasgow Herald, Leeds Evening News, Freeman's Journal, Worcester Herald, Nottingham Express, Cardiff News, &c.*

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond street (3 P.M.).

TUESDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M.), Ophthalmic, 2.15 P.M.).

WEDNESDAY (3rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

THURSDAY (4th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.).

FRIDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), St. Mark's (2.30 P.M.)

SATURDAY (6th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

WEDNESDAY (3rd).—OBSTETRICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M.: Specimens will be shown by Dr. Eden, Dr. R. D. Maxwell, and Dr. H. R. Andrews. Short Communication:—Dr Eden and Mr. F. L. Provis: A Case of Intra ligamentous, Fibro-cystic Tumour of the Uterus, weighing about 30 pounds, Successfully Removed by Enucleation and Sub total Hysterectomy. Paper:—Mr. E. E. Young: Primary Tuberculosis of the Cervix Uteri.

FRIDAY (5th).—WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—8.30 P.M.: Presidential Address:—Dr. L. Mark: Art and Medicine.

LECTURES, ADDRESSES, DEMONSTRATIONS &c.

MONDAY 1st.—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: X Rays. Operations. Diseases of the Eye.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M.: Dr. J. H. Sequeira: Clinique. (Skin.) 5.15 P.M.: Lecture:—Sir H. D. Littlejohn: The Practice of Forensic Medicine.

TUESDAY (2nd). POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—2 P.M.: Medical and Surgical Clinics. 2.15 P.M.: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: X Rays. Operations. Diseases of the Skin.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. L. Guthrie: Clinique. (Medical.) 5.15 P.M.: Lecture:—Mr. J. Pardoe: Misleading Symptoms in Urinary Disease.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Dr. Collier: Local Lesions of Spinal Cord - Anatomy.

WEDNESDAY 3rd.—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Diseases of the Throat, Nose, and Ear. Diseases of Children. 2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: X Rays. Operations.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. T. P. Legg: Clinique. (Surgical.) 5.15 P.M.: Lecture:—Dr. G. H. Savage: Lucid Intervals in Cases of Insanity.

THURSDAY (4th). POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: X Rays. Operations. Diseases of the Eye.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M.: Lecture:—Dr. G. F. Still: Head nodding and other Curious Movements in Children.

CHARING CROSS HOSPITAL.—4 P.M.: Dr. Murray: Demonstration (Medical) (Post-Graduate Course.)

FRIDAY (5th). POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. 2.15 P.M.: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: X Rays. Operations. Diseases of the Skin.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. D. Grant. Clinique. (Ear.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Dr. Collier: Local Diseases of Spinal Cord—Diagnosis.

SATURDAY (6th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—10 A.M.: Diseases of the Throat, Nose and Ear. 2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: X Rays. Operations.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

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The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

Communications, Letters, &c., have been received from—

A.—Mr. C. A. Abraham, York; Mr. M. D. E. Anklesaria, Lond.; Apollinaris Co., Lond.; Dr. Atlee, Lond.; Aberdeen, City of, Medical Officer of Health of; Messrs. Adlard and Son, Lond.; Mr. E. Arnold, Lond.; A. E. N.; Messrs. Allen and Hanburys, Lond.; Mr. Frank G. Aldrich, Carnarvon; Dr. J. Finlay Alexander, Lastingham; A Disgusted Student; Messrs. Aked and Aked, Lond.; Messrs. C. Ash, Sons, and Co., Lond.

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G.—Mr. H. E. Gray, Cambridge; Dr. Alfred S. Gubb, Lond.; G. R.; Dr. E. A. Gates, Lond.; Mr. W. Griesewood, Liverpool; Mr. D. G. Griffiths, Aberystwyth; Mr. R. J. Godlee, Whitchurch.

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O.—Dr. Charles Ormerod, Burgess Hill; Oxoniensis.

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